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This report updates the January 1967 study of California junior college financing, considering particularly the possibility of the state assuming all operating costs of the system. Using data not available for the earlier study, it is also examines certain new areas. Section I contains the introduction, a summary, and 12 overall recommendations. Section II, on expenditures, suggests a model with indexes to measure five factors and one for extimating and allocating state funds. Section III, sources of funds, finds that state support for total operating costs is not warranted. Programs best served by state or local funding are discussed. Section IV, funding methods, finds the existing foundation program ineffective in equalizing differences in local financial ability. Four modifications are suggested. Section V, budget process, calls for systemwide review at the state level and a more timely consideration of district budgets by local boards, based on improved information. The system should be moved from the public school finance framework to that of higher education. Four specific changes are recommended. Section VI, on equality of opportunity, suggests ways to insure that geographic and socio-economic factors do not keep potential students out, and warns against starting small colleges that cannot offer the broad programs of larger colleges without excessive operating costs per student. Seven appendixes, with tables, figures, etc., amplify certain parts of the study. (HH)

COORDINATING
CALIFORNIA'S
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REVIEW
OF
JUNIOR COLLEGE FINANCE

Coordinating
Council for
Higher
Education

69-2

February 4, 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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REVIEW
OF
JUNIOR COLLEGE FINANCE

Report No. 69-2

Coordinating Council for Higher Education
1020 Twelfth Street
Sacramento, California 95814

February, 1969

UNIVERSITY OF CALIF.
LOS ANGELES

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FOREWORD

This review was prompted by the adoption of Senate Resolution No. 256 during the 1968 Regular Session of the California Legislature. This resolution requested the Coordinating Council to review and update the findings and recommendations of an earlier study of Junior College Finance completed by the Council in January 1967. In particular, the Council was requested to direct its attention to the possibility of the state assuming the total responsibility for financing the operating costs of public Junior Colleges in California.

The Council is thus provided with the opportunity of reviewing its policies regarding the fiscal needs of the Junior Colleges in light of (1) recent changes in statutes specifying governance patterns and fiscal procedures and (2) additional research and data that have become available since the 1967 study. As a result of several months of study, the staff is suggesting several changes in existing Council policies as well as a number of new policies. In keeping with the intent of the resolution, review and policy recommendations are confined to the operating budgets of Junior Colleges and exclude capital outlay considerations.

In order to compare the policy recommendations of this review with Council policies that resulted from the 1967 study, the latter policies are detailed in Appendix A, together with a summary of findings contained in the earlier study.

The topic of Junior College finance is quite complex and only thoroughly understood by individuals who have worked for a number of years in the area. Consequently, the format of this report is arranged so that nearly all of the technical detail and statistical analyses are contained in the various appendices. Those interested primarily in the conclusions, policy considerations, and resulting recommendations may confine their perusal to the text in Sections I through VI. Those interested in the statistical and technical detail behind the findings described in the text will want to consult the appendices.

Council staff was assisted in this study by an advisory committee whose members represented both higher education and state government in California. The membership of this committee is listed in Appendix B. In addition, five individuals from outside California graciously consented to review and comment upon earlier drafts of the study. This effort was undertaken by: C. C. Colvert, Professor and Consultant in Junior College Education, University of Texas; Robert Frederick, Jr., President, Corning Community College, Corning, New York; Frederick Giles, Dean of the College of Education, University of Washington; S. V. Martorana, Executive Dean for Two-Year Colleges, State University of New York; and James Wattenbarger, Director, Institute of Higher Education, University of Florida. During the study, Council staff also held discussions with the fiscal officers of a number of public Junior Colleges in California.

Comments and criticism from all of the above individuals contributed significantly to the findings, conclusions and recommendations presented herein. Needless to say, final responsibility for the document rests with the Council staff. Charles McIntyre of the Council staff prepared the study. Graduate student assistants Les Jones, William Ward, and Richard Wynne aided by performing the statistical calculations.

OWEN ALBERT KNORR
Director

2/3/69

#297

COORDINATING COUNCIL
FOR HIGHER EDUCATION

Resolution on Junior College Finance

WHEREAS, Senate Resolution No. 256 requests the Coordinating Council to review and update the findings and recommendations of its 1967 study of the financing of California's public Junior Colleges, giving particular attention to the possibility of the state assuming responsibility for the total financing of the operating costs of the public Junior Colleges; and

WHEREAS, The staff of the Coordinating Council for Higher Education has completed review of the 1967 study; now, therefore, be it

RESOLVED, That the Coordinating Council for Higher Education authorizes the Director to transmit the Review of Junior College Finance (No. 69-2) to the Governor, the Legislature and to the Board of Governors of the California Community Colleges; and be it further

RESOLVED, That the Coordinating Council for Higher Education advises the Legislature that state responsibility for the total financing of the operating costs of public Junior Colleges is not warranted, given the existing functions and organizational structure of the Junior Colleges. An increase in the state general fund share of costs is justified, however. The state share could substantially exceed the 45% originally recommended by the Master Plan for Higher Education; and be it further

RESOLVED, That the Coordinating Council for Higher Education advises the Governor, the Legislature, and the Board of Governors of the California Community Colleges that the following policies for financial support of the Junior Colleges are desirable.

1. Local district boards should have the authority, without statutory restrictions, to establish local tax rates in support of programs which may not fall within the scope of state level financial participation but which are consistent with the functions of the Junior Colleges.

2. The Board of Governors of the California Community Colleges should annually formulate a systemwide Junior College financial proposal for subsequent Executive and Legislative review. This financial proposal should be developed on the basis of actual and projected systemwide fiscal experience without recourse to review of individual district budgets. The proposal should include such items as (1) description of aggregate expenditures and income in terms of relevant price and policy variables, (2) suggested state and local sharing ratio, and (3) estimated uniform property tax levy required to effect this ratio.

3. The present state foundation program should be modified in favor of (1) an expenditure measure that accounts for those variables most significantly related to costs (such as college size, type of curriculum, and emphasis on tutorial instruction, guidance and counseling), (2) student count based on district of enrollment rather than student's age and district of origin, and (3) a mechanism that allows for an accurate estimate of the state and local sharing ratio in advance of the fiscal year for which it is effective.

4. State support for non-graded instruction should be continued pending complete study of continuing higher education in California.

5. Tuition charges to Junior College students from out-of-state should be set to cover the "average teaching expense" estimated for the year in which the charge is levied.

6. The Board of Governors of the California Community Colleges should review the fee structure for non-instructional services in the Junior Colleges, including consideration of those fee policies recently adopted by the Council with respect to the University of California and the California State Colleges. (Counseling is an essential aspect of instruction in the Junior Colleges and should be funded from the same sources as is the instructional program.)

7. Financial assistance programs for the economically disadvantaged student who may attend a Junior College need to be increased in number and amount. These programs should be initiated and administered by local districts under general guidelines established by the Board of Governors of the California Community Colleges. State financial participation should be provided in the form of support for specific programs proposed by districts.

8. Local districts should be authorized to use public funds for (1) matching federal grants and loans to students and (2) for purposes of scholarships, grants, loans, and other forms of student financial assistance.

9. The statute limiting teacher salary costs to not less than 50% of the total current expense of education should be repealed or otherwise modified so as to provide districts greater flexibility to conduct student-oriented services of a non-classroom nature.

10. Efforts to implement a program structure for describing Junior College expenditures should be continued.

Adopted
February 4, 1969

SECTION I

INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

Criteria

Existing Council policies on Junior College financing are contained in resolutions adopted in January, 1967 (see Appendix A). This study assesses the need for modifications in these recommendations and in addition, examines the possibility of total state financing of Junior College operating costs as requested by Senate Resolution No. 256. In the 1967 Council study of Junior College finance, the general objective was to derive a state-local fiscal relationship for financing Junior Colleges that best satisfied five general criteria judged by the study group to be relevant to the problems examined.

These criteria have been modified on the basis of review and comment by both the study advisory committee (membership listed in Appendix B) and the several out-of-state consultants who consented to assist in this study. The following five criteria, therefore, are used throughout this study to evaluate existing and suggested policies in Junior College financing.

Criterion 1. Revenues to support the operation of Junior Colleges should be derived on an equitable basis taking into account ability-to-pay and, to the extent appropriate, benefits received.

Criterion 2. Junior College fiscal policies should encourage the optimum utilization of available resources.

Criterion 3. Junior College fiscal policies should afford maximum flexibility for educational and operational needs at the local level and also reflect broad state educational objectives and policies.

Criterion 4. Junior College fiscal policies should be defined as simply and concisely as possible and be sufficiently stable to encourage long-range educational planning; all implications of proposed changes or adjustments should be easily identified.

Criterion 5. Junior College fiscal policies should afford the opportunity for Junior College education to all individuals within the state who may profit from such education.

Assumptions

The following assumptions are employed throughout this study:

(1) no tuition (as distinct from fees) will be charged to Junior College students who are from within California and who are classified as other-than-adults,[1]

(2) federal funds for general expenditures in Junior Colleges will continue at approximately the same levels as in the past few years, and

(3) sources of state and local support (general fund and local property tax) for Junior Colleges will remain largely unchanged.

With slight modification, these assumptions are similar to those used in the 1967 study. (One assumption regarding adequacy of the absolute expenditure level during 1963-64 has been deleted.)

The assumption regarding tuition is designed to exclude from this study a topic which would be more appropriately discussed elsewhere and would include the four-year public segments as well.

A continuation of the existing state and local tax structure appears to be more realistic than the converse; i.e., that there will be significant modification. If the latter does occur at some future date, however, a number of the conclusions and projections of this study would require modification. Thus, while there may be a trend away from property to other more appropriate measures of wealth, the recommendations and conclusions of this review are made on the assumption that property will continue to be a significant basis for taxation in California.

Finally, while there have been discussions in recent years concerning general federal assistance for current operations in Junior Colleges, there is currently no evidence that such funding will be available in the near future.

Summary

The primary emphasis of this study was to review the 1967 Council study and consider total state financing of the Junior Colleges. In addition, utilizing data and research not available at the time of the earlier study, the staff sought to extend the review into certain relevant areas not previously treated.

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[1] Students who are 21 years-of-age or over and enrolled for less than 10 class hours per week are defined as "adults."

Section II describes the various objectives for which funds are budgeted in the Junior Colleges. In addition, variations in expenditures between districts are also examined. Following this, the several sources of income that are (and might be) used in support of Junior College operations are described in Section III. The particular question of state responsibility for the total financing of operating costs of Junior Colleges is explored in this section. Section IV describes and analyzes the existing "state foundation program" which is used to allocate state funds among Junior College districts. A description of the local Junior College budget process is contained in Section V. Finally, program variation and the accessibility of Junior Colleges to students are examined in Section VI under the title "equal educational opportunity." Previous Council policies, technical financial detail, and statistical analyses are all contained in the Appendices.

The major conclusions of each of the sections are summarized in the following.

Section II - Expenditures

The findings of Section II indicate that the state foundation amount, as currently specified for measuring unit expenditures and allocating state funds among Junior College districts, should be modified. Current funding distinctions for age and geographical origin of student are unrelated to costs. Further, the distinction for size of district (below 1,000 students) is not sufficiently accurate.

An alternative expenditure model is suggested which would include indexes measuring (1) student equivalents on the basis of district of enrollment, (2) type of curriculum (emphasis between liberal arts and technical-vocational courses), (3) average college size in a district, (4) emphasis on guidance and counseling, and (5) emphasis on remedial and tutorial instruction. An empirical test of the model indicates that it explains a significant amount of the variation in local district expenditures. A model of the general type, with refinement by the Board of Governors of the California Community Colleges, could be a useful tool both for (1) estimating systemwide expenditure requirements and (2) allocating state funds among districts. The results estimated for this alternative model conform substantially more to the criteria established for this review than do the results from use of the existing foundation amount.

Section III - Sources of Support

A substantial increase in the state share of Junior College operating expenditures is consistent with the criteria employed in this review. This higher state share may be justified on the basis of (1) more equalization of local financial ability among districts and (2) deriving the support of Junior Colleges from taxpayers on a more equitable basis. There is no apparent basis for pegging the state share at 45%, however. State general fund costs of alternative sharing ratios are estimated in Appendix E.

State responsibility for the total operating costs of the Junior Colleges is not warranted. In order that the local district board be capable of responding to community needs (the essence of local control), such boards must have the ability to suuport, from local sources, supplementary or other programs which may not be recognized in statewide budget considerations. Total state support would require some central review of individual district budgets by the Board of Governors of the California Community Colleges, an impractical procedure. In addition, community service expenditures are oriented primarily to the local district area and may, therefore, justify local financial support.

In order to achieve a greater degree of tax equity and equalization of district financial ability, the local share of any expenditures which are determined on a systemwide basis should be derived from a uniform property tax levied against assessed valuation throughout the state in both non-district and district areas. (The resolution adopted by the Council does not include the uniform property tax as recommended.)

State support of non-graded instruction should continue, pending complete review of adult and continuing education in all levels of secondary and higher education, and subsequent determination of the appropriate state, local, and private responsibilities for financing such programs.

Tuition to out-of-state Junior College students should be set to cover the average teaching expense as recommended by the Master Plan for Higher Education. The charge should be based, however, upon costs estimated for the same year for which the charge is levied, rather than that teaching expense reported two years earlier (the current practice).

The Board of Governors should review the existing fee structure for non-instructional services in the Junior College, including consideration of the possible desirability of conforming such fee policies to those recently adopted by the Council for the University and State Colleges (see Appendix F). Appropriate note should be taken of the different philosophical and procedural bases for student fees in the Junior Colleges. For example, counseling is an essential aspect of instruction in the Junior Colleges and should be funded from the same sources as is the instructional program. Further, if changes were to be made that increased the level of such fees, appropriate fee waiver or student financial assistance policies for the economically disadvantaged would be necessary.

Section IV - Financing Methods

Evidence examined in this section indicates that the existing "foundation program" is not effective in equalizing differences in local financial ability among Junior College districts. In addition, the instrument has not been adjusted with sufficient frequency to meet annual changes in the expenditure requirements of the Junior Colleges.

Modifications in the foundation program are suggested including (1) elimination of the provision for state basic aid, (2) modification of the foundation amount in favor of a budget model such as that suggested in Section II which would be reviewed and revised annually, (3) student count based upon district of enrollment rather than age or district of origin, and (4) elimination of the computational tax in favor of the use of a uniform property tax levied throughout the state according to the discussion in Section III.

Possible results of the suggested modifications are explored in Appendix C and found to be consistent with the criteria used in this study. The results of the existing foundation program are not consistent with these same criteria.

Section V - Budget Process

There is an indicated need for review and analysis of systemwide Junior College expenditures by state-level decision-making authorities. Also, there is a need for a more timely consideration of district budgets by local boards based upon improved information. In effect, the financing of Junior Colleges needs to be removed from the public school finance framework and treated in a manner similar to that of the other segments of higher education in California. Further, if local boards are to be responsive to the educational needs and preferences of the local community, the boards must have the flexibility to derive local public revenues without statutory restrictions.[1]

Several specific points are suggested:

1. Adjustment in the timing of the budget cycles for local districts in order to relate information better to local fiscal decisions.

2. Continued efforts to implement a program structure for describing Junior College budget requirements.

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[1] Under existing statutes, local boards will have the authority to set tax rates without statutory restriction beginning in 1971.

3. Local board authority to set tax rates (without statutory restrictions) in support of programs that may not fall within the scope of state-level participation, but which are consistent with the functions of the Junior Colleges.[1]

4. Review, analysis, and formulation by the Board of Governors of a systemwide Junior College financial proposal describing aggregate expenditures in terms of relevant price and policy variables. In proposing this systemwide budget to both Executive and Legislative branches of state government the Board of Governors would suggest a state and local sharing ratio and the necessary uniform statewide property tax required to effect this ratio.

Section VI - Equality of Opportunity

To provide equality of opportunity it is necessary to insure that geographic and socio-economic factors do not prevent potential students from attending the Junior Colleges. Findings indicate that to accomplish such objectives requires investment in programs of financial aid for the economically disadvantaged, transportation or residence assistance for those who may be geographically disadvantaged, and remediation and guidance for the academically and socially disadvantaged.

At the same time, it would appear desirable to avoid the establishment of numerous small Junior College campuses in the development of additional capacity to accommodate future enrollment increases. (A general policy of this nature would, of course, be subject to exceptions for unique local conditions such as restricted sites or construction constraints.) Evidence indicates that such small campus centers require greater capital investment per student than do larger colleges and can offer programs comparable to the larger colleges only with much higher operating expenditures per student.

Expenditure variations which may arise in those districts with higher-than-average numbers of socially and academically disadvantaged students may be accounted for in the general budget consideration. To do so, the budget analysis must encompass variables describing those costs for tutorial instruction, remediation, counseling, and guidance which may be considerably higher in some districts than in others. Such information is not currently available and should be included as an integral part of any program budget structure that may be developed.

Financial assistance programs for the economically disadvantaged student who may attend a Junior College need to be increased in number and amount. These programs should be initiated and administered by local districts with the consultation and concurrence of the Board of Governors. State financial participation should be provided in the form of support for specific programs proposed by districts. For effective administration, the Board of Governors should develop broad guidelines to which such financial aid programs would generally conform.

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[1] *Ibid*.

To provide for local participation in financial aid programs, Junior College districts should have the legal authority to use public funds (1) for matching federal grants and loans to students and (2) to grant scholarships and other financial aids to students which do not necessarily require a service to be rendered in return. Finally, the statute setting teacher salary costs at not less than 50% of the total current expense of education should be repealed or otherwise modified so as to provide districts greater flexibility to conduct student-oriented services of a non-classroom nature.

Recommendations

On the basis of the conclusions resulting from this review, it is recommended that the Council adopt the following policies with respect to the financing of Junior Colleges. Some of the policies would change existing Council policy, while others would confirm existing Council policy. A third category of these recommendations are those that would, if adopted, constitute new Council policy.

1. State responsibility for the total financing of the operating costs of public Junior Colleges is not warranted, given the existing functions and organizational structure of the Junior Colleges. An increase in the state general fund share of Junior Colleges operating costs is justified, however. The state share could substantially exceed the 45% originally recommended by the Master Plan for Higher Education.

2. The local share of Junior College expenditures estimated in state level budget considerations should be derived from a uniform property tax levied on both district and non-district areas throughout the state. (The resolution adopted by the Council does not include the uniform property tax as recommended.)

3. Local district boards should have the authority, without statutory restrictions, to establish local tax rates in support of programs which may not fall within the scope of state level financial participation but which are consistent with the functions of the Junior Colleges.[1]

4. The Board of Governors of the California Community Colleges should annually formulate a systemwide Junior College financial proposal for subsequent Executive and Legislative review. This financial proposal should be developed on the basis of actual and projected systemwide fiscal experience without recourse to review of individual district budgets. The proposal should include such items as (1) description of aggregate expenditures and income in terms of relevant price and policy variables, (2) suggested state and local sharing ratio, and (3) estimated uniform property tax levy required to effect this ratio.

5. The present state foundation program should be modified in favor of (1) an expenditure measure that accounts for those variables most significantly related to costs (such as college size, type of curriculum, and emphasis on tutorial instruction, guidance

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[1] Under existing statutes, local boards will have the authority to set tax rates without statutory restriction beginning in 1971.

and counseling), (2) student count based on district of enrollment rather than student's age and district of origin, and (3) a mechanism that allows for an accurate estimate of the state and local sharing ratio in advance of the fiscal year for which it is effective.

6. State support for non-graded instruction should be continued pending complete study of continuing higher education in California.

7. Tuition charges to Junior College students from out-of-state should be set to cover the "average teaching expense" estimated for the year in which the charge is levied.

8. The Board of Governors of the California Community Colleges should review the fee structure for non-instructional services in the Junior Colleges, including consideration of those fee policies recently adopted by the Council with respect to the University of California and California State Colleges.[1]

9. Financial assistance programs for the economically disadvantaged student who may attend a Junior College need to be increased in number and amount. These programs should be initiated and administered by local districts under general guidelines established by the Board of Governors of the California Community Colleges. State financial participation should be provided in the form of support for specific programs proposed by districts.

10. Local districts should be authorized to use public funds for (1) matching federal grants and loans to students and (2) for purposes of scholarships, grants, loans, and other forms of student financial assistance.

11. The statute limiting teacher salary costs to not less than 50% of the total current expense of education should be repealed or otherwise modified so as to provide districts greater flexibility to conduct student-oriented services of a non-classroom nature.

12. Efforts to implement a program structure for describing Junior College expenditures should be continued.

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[1] Counseling is an essential aspect of instruction in the Junior Colleges and should be funded from the same sources as is the instructional program.

SECTION II

EXPENDITURES

Expenditure patterns for Junior Colleges may be examined in several ways: according to the objectives and functions which constitute the college program; variation in total unit expenditures as reported by different districts during the same year; and the trend in both current and price-adjusted expenditure levels over a period of years.

The several broad objectives which Junior Colleges explicitly pursue are (1) preparation for transfer to four-year institutions, (2) occupational training, (3) adult and continuing education, and (4) community services. An individual who has as his purpose two years of technical training leading to employment may accomplish this goal by taking liberal arts courses in addition to the necessary technical-vocational instruction. During his attendance, he will likely make use of the college's guidance and counseling services. Conceivably he might take a number of non-graded "classes for adults" as well. Thus, the means by which the above objectives are pursued may be described by the following general functions: (1) graded instruction in the liberal arts, (2) graded instruction in technical-vocational subjects, (3) non-graded instruction, (4) guidance, counseling, and remedial instruction, and (5) community service programs. The individual student typically takes part in one or more of these activities during his attendance at a Junior College.

The costs of pursuing the above objectives cannot be identified due to the fact that Junior College accounting categories are not specified in such terms. In addition, it is possible to estimate costs for only certain of the functions described. The following estimates are based upon data available for the 1963-64 fiscal year [5, 7]:*

	Expenditure per Student	Total Expenditures ($000's)
Graded Instruction	$ 581	$136,485
Liberal Arts	(535)	
Technical-Vocational	(699)	
Non-graded Instruction	422	4,629
Guidance, Counseling, Remediation	(included in above)	
Community Services	--	2,482
		$143,596

The above table indicates that expenditures for the functions vary considerably from one another. Liberal arts courses are, on the average, significantly less expensive than are the technical-vocational courses.

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* Numbers in brackets throughout the text refer to the References which precede the Appendices.

(Findings of the 1967 Council study, contained in Appendix A, suggest this is due primarily to the larger average class sizes characteristic of the liberal arts.) It is, therefore, expected that the occupational objective is more expensive on a per student basis than is the transfer objective. Non-graded (non-credit) instruction is the least expensive type, owing primarily to the fact that most non-graded classes are held during the evening and are taught by instructors who are paid hourly rates which are less than salaries paid regular day-time faculty for equivalent work.

Few Junior Colleges are able to estimate with accuracy the cost of achieving the different broad objectives, much less the cost of educating students in individual subject field areas. Implications of this information deficiency are discussed further in Section V.

Variation in College Expenditures

Findings discussed in Appendix C indicate that variation in expenditures per student among Junior College districts is related primarily to local financial ability (expressed in terms of assessed valuation per student) and the district's student:faculty ratio. The student:faculty ratio in turn is related primarily to college size, course sectioning policies, the predominant kinds of curricula offered at the particular college, and to a limited extent, general faculty workload policies.

It is difficult to isolate possible "size-cost" relationships in the Junior College data since variables describing size, financial ability, and range of curriculum offered are all highly interrelated. Findings in Appendices C and D do indicate, however, that there are statistically significant scale-economies in the operation of Junior Colleges, the size-cost relationship being especially pronounced within the range from zero to approximately 5,000-6,000 students.

As noted above, local financial ability is highly related to unit expenditure levels. State aid per student is of less significance, and the level of the local tax rate appears to be totally unrelated to expenditure variation.

Trends in Systemwide Expenditures

Variations from year to year in the constant expenditures characteristic of the Junior College system are also of considerable importance. An index of such expenditures may be constructed by adjusting reported expenditures for the annual increases that occur in the "price" of the Junior College operation, i.e., faculty salaries, equipment, supplies, and other objects. The analysis in Appendix E indicates that the systemwide Junior College budget level as measured in expenditures per student has shown a decline over the past 16 years when price adjustments are taken into account. The following growth rates are estimated to have taken place with the Junior College system during the years 1951 through 1967:

	Annual Growth Rate
Actual current expenditures per student	3.62%
Price component	4.57
Constant expenditure component	-0.95

Local district financial ability is the most significant of those variables which may relate to year to year changes in the system-wide expenditure level. Analysis indicates also that changes in the level of the statewide "foundation amount" (the expenditure measure now used to allocate state funds to individual districts) and local district tax rates are only moderately related to expenditure level changes.

Changes in both average district size and the student:faculty ratio appear highly related to changes in the constant (price adjusted) level of expenditures per student for the system. The student:faculty ratio increased significantly over the period 1951 to 1967. The results suggest that any budgeting for new program augmentation during this period may have been at the expense of existing programs.

Measurement of Expenditure Requirements

Existing methods of allocating state funds make use of a "foundation amount" to measure average expenditures per student throughout the Junior College system. (See Section III for discussion of the financing method.) This amount is specified by statute and adjusted only periodically by Legislative action. Consequently, the amount typically lags behind the average expenditure per student reported for the system. For example, the foundation amount is currently set at $628 per "non-adult" and $510 per "adult" enrolled.[1] In contrast, systemwide expenditures for 1968-69 are estimated at $777 per student.

As a consequence of the age distinction, the foundation amount provides a smaller state appropriation for "defined adults," than for "non-adults." This is based, presumably, upon an assumption that the state should support "adults" at a rate lower than that for "non-adults." There is also the notion that the defined adult normally enrolls in less expensive non-graded instruction. This is not currently the case, however, since there are four adults taking graded instruction for every one adult recorded in non-graded classes. During 1965-66, for example, only 15,000 of the 59,000 ADA (average daily attendance) of adults were reported in non-graded instruction.

The foundation amount is also dependent upon district size, but only for districts below 1,000 ADA. All districts in excess of 1,000 ADA are treated similarly in the allocation of state funds. In contrast to such practice, findings in Appendix D indicate that expenditures and size are related over a broader range of college sizes than just the "zero to 1,000 ADA" portion.

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[1] Students who are 21 years-of-age or over and are enrolled for less than 10 class hours per week are defined as "adults." All others are "non-adults."

Modifications in the foundation amount are indicated. A budget model designed to be sensitive to the factors which appear to be relevant to variations in local expenditures is explored in Appendix C. This model specifies expenditures per student to be a function of:

(1) type of curriculum (emphasis between liberal arts and technical-vocational courses),

(2) average college size in a district,

(3) emphasis on guidance and counseling, and

(4) emphasis on remedial and tutorial instruction.

This model is examined for purposes of state-level estimation of Junior College expenditures. As a result, a variable describing Community Services, primarily local in orientation and locally funded, is not included.

An empirical test discloses that this model explains a significant amount (approximately one-half) of the variation in local district expenditures. Better prediction is obtained when certain financial variables such as local financial ability are added to the function. This is due to the fact that variations in district financial ability have, in the past, been a significant cause of variations in district expenditure levels. It does not suggest, however, that financial ability should be a significant determinant of expenditure levels. Indeed, the concept of financial equalization among districts is to render such variations in local financial ability insignificant. Therefore, certain variables which may have been significantly related to expenditure levels in the past are not appropriate for inclusion in the model.

A model of this general type, with appropriate refinement by the Board of Governors of the California Community Colleges, could be a useful tool both for (1) estimating systemwide expenditure requirements and (2) allocating state funds among districts.

Conclusions

The findings of Section II indicate that the state foundation amount, as currently specified for measuring unit expenditures and allocating state funds among Junior College districts, should be modified. Current funding distinctions for age and geographical origin of student are unrelated to costs. Further, the distinction for size of district (below 1,000 students) is not sufficiently accurate.

An alternative expenditure model is suggested which would include indexes measuring (1) type of curriculum (emphasis between liberal arts and technical-vocational courses), (2) average college size in a district, (3) emphasis on guidance and counseling, and (4) emphasis on remedial and tutorial instruction. An empirical test of the model indicates that it explains a significant amount of the variation in local district expenditures. A model of this general type, with refinement by the Board of Governors of the California Community Colleges, could be a useful tool both for (1) estimating systemwide expenditure requirements and (2) allocating state funds among districts. The results estimated for this alternative model conform substantially more to the criteria established for this review than do the results from use of the existing foundation amount.

SECTION III

SOURCES OF SUPPORT

This section reviews the various sources utilized in the financial support of California public Junior Colleges and examines in particular the question of state and local sharing and the possibility of the state assuming responsibility for the total financing of the operating costs of the Junior Colleges.

Public education traditionally has been supported primarily by taxes. This pattern is still characteristic of support at the elementary and secondary levels. In public higher education, however, there has been a tendency in recent years to charge the student an increasing portion of the cost of his education, presumably in recognition of the private benefits which accrue to the individual from this education. While this implies some shift away from emphasis on the ability-to-pay concept, increasing interest in student financial aids, especially in the case of socio-economically disadvantaged students, indicates that the practical ability of the individual student and his family to finance the costs of education is still of major concern.

Criterion 1 provides a frame of reference for the consideration of the several income sources that are (or might be) utilized in support of California public Junior Colleges.

> Criterion 1. Revenues to support the operation of Junior Colleges should be derived on an equitable basis taking into account ability-to-pay and to the extent appropriate, benefits received.

The "benefits received" aspect of Criterion 1 implies measurement of both the private and social (or public) benefits of the Junior College program and identification of the primary recipients of such benefits. The private benefits which accrue to an individual from a Junior College education are usually measured in terms of the expected future stream of additional income and the additional social and intellectual amenities which are due to the added education. The question of private benefits is not specifically treated in this review.

The benefits resulting from Junior College education may also be measured in terms of their social impact. Several categories of social benefits may be cited: (1) the general increase in human capital, (2) decreased requirements for certain public services along with increased tax paying ability, (3) new knowledge derived from research that is incidental to the main purpose of the instructional program, (4) increased social mobility (i.e., equality of opportunity), (5) the indirect effect upon an area's income due to the increased industrial activity, (6) improved political process, and (7) increased cultural attainment. Satisfactory empirical measurement of most of these social benefits is difficult.

The social benefits resulting from the program at a specific Junior College are doubtless dispersed far beyond the geographical boundaries of the district in which that college is located. While there is considerable local social benefit accruing from the presence of a Junior College (note specifically the apprentice and community service programs), the current mobility of individuals suggest that the citizenry of Los Angeles may benefit at some time from the education of a student at Shasta College, for example. Beyond such generalizations, there is very little specific that can be said regarding the identification of those who benefit from Junior College programs.

The balance of this section addresses the following: (1) the existing patterns of support for public Junior Colleges in California and elsewhere in the nation, (2) identification of the burden of Junior College financial support upon various localities and taxpaying units within California, and (3) the specific question of appropriate state and local sharing of Junior College operating costs.

Student Charges

There are no student charges for instruction of "non-adults" attending Junior Colleges in California. Adults, however, may be charged fees for instruction taken in either regular graded (i.e., given for credit) or non-graded "classes for adults." Previous Council research indicated that less than half the Junior Colleges in California charged adults fees of any kind during 1964-65 [5]. In a more recent year, 1966-67, expenditures for non-graded "classes for adults" totaled $8.5 million to which "adults" contributed $356,696 in fees or approximately 4% of cost. (Adults also paid $556,000 in fees for instruction in graded classes.)

This does not, however, suggest that a much greater portion of the cost of non-graded instruction in the Junior Colleges should necessarily be supported by user fees as is the case for extension instruction in the University and State Colleges. Nor does it necessarily follow that the state should refrain from providing financial support for non-graded instruction conducted in the Junior Colleges. The specific concern centers around the individual who enrolls in the non-graded course without specific purpose. It is not certain that any significant social benefit results from such instruction. The term non-graded, however, is not a good measure of this situation. For example, the "adult" or "non-adult", engaged in a transfer program with a bachelor's degree as his ultimate goal, may enroll in certain non-graded courses. The results of this instruction may ultimately be translated into one or more of the social benefits described above and possibly justify public financial support rather than user or tuition charges. The issue is not clear, however. Social benefit may also be derived from non-graded instruction of the individual whose goal is not nearly as specific as that of the student who intends to transfer to a four-year institution.

A complete review of adult and continuing education in the three segments of higher education and secondary schools is needed. A study of this type is beyond the scope of a review of Junior College finance. Until such a study is undertaken, however, it is suggested that state and local public support of non-graded instruction in the Junior Colleges continue. The elimination of this support would likely result in curtailment of a number of non-graded courses that do provide social benefits, particularly to the local constituency of the colleges.

Junior Colleges are permitted by law to charge fees for the non-instructional services of parking and health service. Evidence indicates that relatively few colleges actually do so. [5]. Health service expenditures for all districts totaled $832,000 during 1966-67, an average of less than $3 per student. Parking expenditures for the colleges are unknown.

With the exception of counseling and guidance, the overall extent of non-instructional services provided for Junior College students is substantially below that of either the University or State Colleges. Nevertheless, in view of the virtual absence of student fees in the Junior Colleges, there is a need for an examination of the financial support for non-instructional services in the Junior Colleges. Such an examination might well consider the adoption of all or part of the fee policy adopted by the Council at its October 1968 meeting (see Appendix F). Particular attention should be paid to the differences in objectives of counseling and guidance and differing student characteristics in the two-year colleges as contrasted to the four-year institutions. Note, however, that increased fees of any sort should be accompanied by fee waivers and/or financial assistance policies for those students unable to meet the added cost obligations. (See further discussion of this point in Section VI.)

An additional source of revenue from student charges is the out-of-state tuition fee. The California Master Plan for Higher Education (1960) recommended that students who were residents of other states would pay tuition "sufficient to cover not less than the state's contribution to the average teaching expense per student." The Plan went further to define average teaching expense as encompassing those faculty salaries, clerical salaries, supplies, equipment, and organized activities related to teaching. Both the University and State Colleges currently follow this recommendation.

Students attending California Junior Colleges from out-of-state are scheduled to pay $12.50 per semester unit in 1968-69 or the equivalent of $375 for a full-time-equivalent student attending for the school year. These charges are based upon costs similar to the "average teaching expense," but are measured by the actual costs reported two years prior to the year in which the rates are to be effective. Charges based upon estimates of current costs would seem to be more reasonable. (The portion of total cost that might be expected of the non-resident in all segments is the subject of another Council study to be completed in 1969.)

The funding of Junior Colleges elsewhere in the nation was examined in a recent Council study [8]. Findings indicated a slight national trend toward greater use of student charges (tuition and fees) for support of Junior Colleges during the past decade. During 1965-66, student charges accounted for 24% of educational and general income reported by 278 Junior Colleges in 36 states other than California. In California, student charges amounted to 2% of Junior College income during the same year.

Federal Income

The relative share of Junior College income derived from federal programs has increased gradually during recent years. This share amounted to nearly 5% during the 1966-67 fiscal year. Most of the federal funds are earmarked for specific purposes, such as vocational education, work-study programs, student loans, language laboratories, etc. Only funds received from "impacted area aid," (P.L. 874) and Forest Reserve funds may be used for general purposes in the college. The systemwide total for the latter two programs was $2.2 million during 1966-67.

Nationally, federal support for Junior Colleges increased from $.8 million in 1957-58 to more than $22 million in 1965-66. Junior College systems in other states reported an average federal "share" that was nearly identical to that reported in California during 1965-66. The absence of a significant federal grant program for general, rather than specific, purposes rules out this source as a significant element in the fiscal planning for the general instructional program in the colleges.

State and Local Shares

The Council position on state support taken after consideration of the 1967 study reaffirmed the Master Plan recommendation that the state support 45% of Junior College expenditures (but by 1970, rather than 1975 as suggested in the Master Plan). Senate Resolution 256 which called for this review specifically requests an evaluation of the "state assuming total responsibility for the total financing of the operating costs of the public Junior Colleges."

The state "share" of current instructional expenditures has increased from approximately 29% to 32% over the past 16 years; but is still much below the "recommended" amount. The basis for such an amount is presumably to insure adequate total funding in conjunction with the foundation method of financing. In the final analysis, the "appropriate" state and local sharing ratio is a decision that must be based largely upon "value judgments" governed by the desire to attain certain goals, rather than upon "factual judgments" which relate to empirical alternatives. Several of the more pertinent considerations with respect to "sharing" policies follow.

Recent national trends in the income sources for public two-year colleges have been away from local government funding and toward other sources, primarily state government appropriations. The California pattern of "1/3 state - 2/3 local support" is not reflective of current practice elsewhere in the nation. In 1965-66 data examined for 36 states, the state government role was found to be predominant, accounting for 43% of educational and general income [8]. The local share for these same states averaged 26%. In 14 of the 36 states, income from state government accounted for more than one-half of instructional expenditures. Only six states reported public two-year colleges operating without any income from the state government while two other states indicated that less than 1% of income is derived from state government.

In six states Junior College systems relied completely upon state government appropriations, supplemented by student fees and federal funds. Notably, several of these situations represented systems of technological schools which were under state control. However, there was no reported instance of 100% state funding for the comprehensive two-year community college.

Considerations of "tax equity" may also figure prominently in the determination of appropriate state and local sharing. The equity concept is implied in the "ability-to-pay" aspect of Criterion 1.

Determinations of equity in taxation are based, in part, upon the effective percentage that the tax represents of a person's personal income, otherwise known as the rate of incidence. Many studies of tax incidence group individuals according to successive income levels, then determine the rate of incidence for each level. The incidence of those taxes which support California Junior Colleges has been examined in at least two studies done in recent years for the California Legislature [2,4].

As commonly postulated in taxation theory, the property tax is found to be distinctly regressive, i.e., it imposes a higher effective rate upon those individuals with low income than upon those with higher incomes. The net incidence of those taxes comprising the state general fund (mostly personal income and sales taxes) was nearly proportional, i.e., the same effective rate upon all income levels. Since the local property tax comprises approximately two-thirds of the Junior Colleges income and the state general fund only one-third, the composite of state and local taxes used to support California Junior Colleges is regressive. This result contradicts Criterion 1 where equity of contribution on the basis of ability-to-pay would imply that, at the minimum, the effective tax rates paid should be the same regardless of income level.

Note, however, that nearly one-third of all property tax assessments in California are upon utilities, private corporations, and various commercial concerns, rather than upon owners of residential property (the group for whom the above incidence analyses were conducted). The effective incidence, therefore, depends largely upon the extent to which various firms are able to shift property tax costs forward to the purchasers of goods and services or backwards to stockholders. The multiplicity of industrial situations in California prevents any definitive conclusion with respect to such shifting, although there is the suggestion that the incidence of Junior College support may be somewhat less regressive than the available tax analyses would initially indicate.

Another, less objective, method of analyzing "tax equity," is a review of taxpayer acceptance of particular taxes. While there is no satisfactory method of measuring reaction to State general fund taxes, reaction to local property taxes for Junior Colleges may be assessed by the successes and failures of local bond and tax override elections. Research indicates a significant trend toward fewer successes in such elections, especially during the past two years (see Appendix E). This would appear to represent growing voter disapproval of the property tax as a means of financing Junior College expenditures. However, disapproval of the specific programs to be supported by the proceeds from such bonds or tax overrides may also be a factor in these results.

The tax equity or ability-to-pay question is also observed in the difference in Junior College tax rates for individuals residing within Junior College districts as opposed to those residing in non-district areas. During 1966-67 the total Junior College tax rate on property located within organized districts averaged 57¢ per $100 (of assessed valuation). The similar rate upon property not in organized districts was approximately 30¢. The rate disparity two years earlier was 52¢ and 33¢, respectively. If the benefits from Junior College programs are distributed as described above, such geographical differentials in tax rates are not consonant with Criterion 1.

These findings suggest the need for more uniformity in property tax levies throughout the state in order to approach equity in tax incidence. One means of accomplishing greater equity would be a uniform property tax levy throughout the state for Junior College purposes.

Equalization of the wide variations in local district financial ability requires that a substantial portion of Junior College expenditures be derived on a statewide basis. Normally, this signifies a large state general fund share, although the same result may be accomplished in part by a uniform property tax statewide. In the latter situation, the level of local funding source is not fully determined locally. As noted below, however, inadequate equalization appears to be as much a consequence of the relative state and local sharing which results.

Another important aspect of the sharing discussion relates to the concept of "local control." It is often argued that as the state share increases there is a corresponding decrease in the decision-making responsibility of the local Junior College board. This argument seems valid for state shares which equal or nearly equal 100% (i.e., total state responsibility). In instances where the state share is less than 100%, even though it may exceed 50%, the argument is not so clear cut.

If "local control" may be defined as "the ability of the local college administration and board to be responsive to the needs and preferences of the local community (consistent with the functions normally assigned to Junior Colleges)," then such local control is not necessarily a function of the state-local sharing ratio. Indeed, the ratio may be irrelevant. For example, under the existing foundation method and a "2/3" local share, a local Junior College District board may be requested by its constituents to offer a unique, but costly instructional program. The program is found to be an appropriate function for the district and of sufficient merit as to warrant inclusion in the college budget. However, the district is at its statutory maximum tax rate(s) and local assessed valuation is such that the new program may be funded only by cutting back existing programs or proposing a tax override to the electorate. Recent bond and override elections in the immediate area have consistently failed. In this example, the local board has little flexibility in responding to community requests for educational programs, even though two-thirds of college funding is derived from local property taxes.

Total state support, if accompanied by minimal local board control, appears inappropriate in view of the desirability of some degree of local control--as defined above. Total state support would require some form of central review (presumably by the Board of Governors of the California Community Colleges) of the budgets for individual Junior College Districts, an impractical procedure (see Section V). In addition, those community services which are primarily local in their orientation may justifiably be funded from local sources.

The need for equalization of differences in local financial ability may be met in part by a uniform statewide property tax levy. If this alternative is selected, the state general fund, local property tax sharing ratio is only partially pertinent to the equalization question. The ratio is still relevant, however, to the equity with respect to ability-to-pay criterion. The higher the proportion of general fund revenue used to support the Junior Colleges, the less regressive (presumably more equitable) will be the incidence of the total Junior College cost upon the taxpayers of the state.

State level funding substantially in excess of the current 32 percent average, therefore, seems to be appropriate in order to effect an adequate equalization of funding among districts and to distribute the incidence of Junior College support more proportionately among the various income classes within California. The exact state and local shares cannot be determined empirically. For example, there is no apparent basis for pegging the state share of Junior College operating costs at 45%. There is no reason to believe, however, that a state share in excess of 50% of Junior College expenditures would reduce the local board role in college decision-making, if the board has continuing access to local support.

Costs to the state general fund for alternative sharing ratios are estimated for 1969-70 in Appendix E, Table 6. For example, an increase in the state share to 50% would require an estimated $67 million over and above the estimated General Fund outlay under current sharing policies ($119 million).

Conclusions

A substantial increase in the state share of Junior College operating expenditures is consistent with the criteria employed in this review. This higher state share may be justified on the basis of (1) more equalization of local financial ability among districts and (2) deriving the support of Junior Colleges from taxpayers on a more equitable basis. There is no apparent basis for pegging the state share at 45%, however. State general fund costs of alternative sharing ratios are estimated in Appendix E.

State responsibility for the total operating costs of the Junior Colleges is not warranted. In order that the local district board be capable of responding to community needs (the essence of local control), such boards must have the ability to support, from local sources, supplementary or other programs which may not be recognized in statewide budget considerations. Complete state support would require some central review of individual District budgets by the Board of Governors of the California Community Colleges, an impractical procedure. In addition, community service expenditures are oriented primarily to the local district area and may, therefore, justify local financial support.

In order to achieve a greater degree of tax equity and equalization of district financial ability, the local share of any expenditures which are determined on a systemwide basis should be derived from a common property tax levied against assessed valuation throughout the state. (The resolution adopted by the Council does not include the uniform property tax as recommended.)

State support of non-graded instruction should continue, pending a complete review of adult and continuing education in all levels of secondary and higher education, and subsequent determination of the appropriate state, local, and private responsibilities for financing such programs.

Tuition charges to out-of-state Junior College students should be set to cover the average teaching expense. The charge should be based, however, upon costs estimated for the same year for which the charge is levied, rather than that teaching expense reported two years earlier (the current practice).

The Board of Governors of the California Community Colleges should review the existing fee structure for non-instructional services in the Junior College, with specific reference to the possible desirability of conforming such fee policies to those recently adopted by the Council for the University and State Colleges (see Appendix F). Appropriate note should be taken of the different philosophical and procedural bases for student fees in the Junior Colleges. Further, if changes were to be made that increased the level of such fees, appropriate fee waiver or student financial assistance policies for the economically disadvantaged would be necessary.

SECTION IV

FINANCING METHODS

It has long been recognized that there is substantial variation in the financial ability (assessed valuation per student) of individual Junior College districts in California. During 1966-67, for example, the "most-wealthy" district reported nearly nine times the wealth of the "least-able" district.

Various methods of equalizing differences in local district financial ability were discussed in the 1967 Council study. In keeping with traditional concepts of public school financial equalization, the existing California state "foundation program" attempts to ameliorate such differences in local ability as state funds are allocated to Junior College districts. Under the calculations of the foundation program, an individual district receives state funds generally according to the following formula:

$$\text{Total State Aid} = \overbrace{\left[\text{Basic aid per Student} \times \text{Number of Students}\right]}^{\text{"basic aid"}} + \overbrace{\left[\text{Foundation Amount per Student} \times \text{Number of Students}\right] - \left[\text{Basic Aid} + \left(\text{Standard Computational Tax Rate} \times \text{Local Assessed Valuation}\right)\right]}^{\text{"equalization aid"}}$$

Basic aid per student is specified at $125 and is distributed to all districts regardless of local wealth. The foundation amount is $628 for non-adults and $510 for adults, as noted in Section II. The computational tax rate is currently $.25 per $100 of assessed valuation for non-adults, $.24 for adults. This rate is used purely for calculations and is not to be confused with actual property tax rates levied in local districts (see Appendices C and E). The student count is based upon the student's district of residence rather than the district in whose college he is enrolled.

The amount of state aid resulting from the foundation program calculation is thus determined primarily by the following variables: (1) the level of basic aid, (2) the foundation amount, (3) the standard (computational) tax rate, (4) number of students and (5) district assessed valuation.

If the number of students increases more rapidly than assessed valuation, there is an increase in the amount of state aid per student. The state share, however, may or may not increase depending upon the increase in total cost of education per student in the district. If the foundation amount is raised and students and assessed valuation increase at equal rates, then the amount of state aid per student increases. The state share is again determined by the change in total cost of education, however. Such adjustments are discussed in detail in Appendix E.

The analyses of cross-section data in Appendix C suggest that the existing foundation program is not an effective equalization instrument. Those financially able, "basic aid" districts who receive only basic aid, the minimum in state support, are still able to expend twenty percent more per student (with generally similar local tax effort) than are the less able "equalization" districts who receive both basic and equalization aid. This occurs even though the equalization districts receive twice the state aid per student reported for basic aid districts. Similar results are found when districts are examined for high and low tax effort, financial ability, and expenditure levels.

Equalization is prevented primarily by (1) the distribution of basic aid to all districts, regardless of local financial ability, and (2) a foundation amount that is typically substantially below the expenditure level of most districts.

Variation in total expenditure among the colleges is due primarily to local financial ability, needs resulting from size variation, and the type and extent of curriculum offered. Potential economies in scale in Junior College operation (discussed in Appendix D) are seemingly obscured due to the fact that larger colleges offer a more expensive range and diversity of curriculum than smaller colleges. The small college is able to conduct a comparable program only at a greater per student expenditure. This higher expenditure is possible only if the district possesses considerable local financial ability; the state aid forthcoming from the foundation program appears to be of minor assistance in the effort. Present statutory restrictions on the local property tax rates for Junior Colleges also appear to restrict the efforts of the "less able" district to offer an adequate program. The district with a large college or colleges, and consequently inherent economies in its scale of operation but relatively low local financial ability, is only slightly better off.

Recent legislation changed the basis for counting Junior College students from one of attendance to one of enrollment. This is in line with the 1967 Council recommendation (see Appendix A).

Application of the foundation amount to students counted according to their district of residence (geographical origin) results in a rather complex system of tuition contracts to recover revenues. Such arrangements would be unnecessary if students were counted on the basis of their district of enrollment.

The decline over the past 16 years in the real (price adjusted) expenditures reported by the Junior Colleges has been noted. Some of this decline may be attributable to the foundation program. A critical feature of the program, the "foundation amount" has been adjusted only seven times during the past 15 years. In addition, the foundation amount has generally been set significantly below the actual unit expenditure level reported for the same year, sometimes by as much as $100 per student (see Appendix E). As a consequence, year-to-year fluctuations in expenditure levels appear to depend largely upon changes in local districts' financial ability, rather than upon changes in program requirements. There is no explicit consideration of the fact that prices (i.e., salaries, equipment and supply costs) have been increasing at an annual rate of 4.6%. Therefore, much of the change in level of "real' expenditures reported by the system seems to be the result of unanticipated changes in financial factors, rather than explicit decisions regarding the value of programs.

A preferable alternative to the above procedure could involve annual review and adjustment of the budget model (described in Section II) by the Board of Governors of the California Community Colleges, specifically for price changes and for desired changes in systemwide policy. Such adjustments, estimated by the Board and proposed to the Legislature, could consist of price changes in (1) equipment, supplies and operating expenses; (2) merit (in-grade) salary adjustments and promotions (between-grade); and (3) pertinent policy changes, such as adjustments to salary schedules, changes in systemwide faculty workload or course sectioning policies, and/or broad program changes.

Conclusions

Evidence examined in this section indicates that the existing "foundation program" is not effective in equalizing differences in local financial ability among Junior College districts. In addition, the instrument has not been adjusted with sufficient frequency to meet annual changes in the expenditure requirements of the Junior Colleges.

Modifications in the foundation program are suggested including (1) elimination of the provision for state basic aid, (2) modification of the foundation amount in favor of a budget model such as that suggested in Section II which would be reviewed and revised annually, (3) student count based upon district of enrollment rather than age or district of residence, and (4) elimination of the computational tax in favor of the use of a uniform property tax levied throughout the state according to the discussion in Section III.

Possible results of the suggested modifications are explored in Appendix C and found to be consistent with the criteria used in this study. The results of the existing foundation program are not consistent with these same criteria.

SECTION V

BUDGET PROCESS

Previous Council studies have noted that existing fiscal arrangements for California public Junior Colleges are complex and yield information that may only coincidentally allow for explicit choices among alternative activities. Furthermore, these fiscal arrangements are dependent largely upon variables that are beyond the control of governing boards and do not appear to be sufficiently stable to facilitate long-range planning by individual districts.

The following criteria have been adopted in this review as a framework for analyzing the existing Junior College budget process:

Criterion 2. Junior College fiscal policies should encourage the optimum utilization of available resources.

Criterion 3. Junior College fiscal policies should afford maximum flexibility for educational and operational needs at the local level and also reflect broad state educational objectives and policies.

Criterion 4. Junior College fiscal policies should be defined as simply and concisely as possible and be sufficiently stable to encourage long-range educational planning; all implications of proposed changes or adjustments should be easily identified.

While the informational basis for fiscal decisions in Junior Colleges may be improved through the introduction of cost accounting and program data, the decisions themselves may not be improved due to an inappropriate budget schedule. The process of decision-making is thus as important as the information which is utilized in making the decision. As a consequence, the following analysis focuses on the ways in which fiscal decisions are made as well as the informational bases upon which these decisions are made.

Budget Calendar

The budget cycle in a typical California Junior College district begins, during the months of October to December, with estimates of academic department expenditure requirements for the fiscal yaar commencing the following July. Estimates of anticipated enrollment are generally developed and made available at this time by an institutional research group within the district.

During the months of December to February, the division and departmental budget requests are aggregated and reviewed by the business office in conjunction with the college president (or district superintendent). At the same time, approximations of anticipated revenues are developed. Budget proposals are reviewed in light of anticipated revenues and meetings held with departmental and division heads during March and April to effect such adjustments in the budget as are deemed necessary. In either April or May, depending upon the district, a preliminary budget is presented to the board by the president (superintendent) and chief business officer. This is normally an information session.

Budget consideration and decision takes place during the months of June, July, and August when the district board adopts three separate budgets each of which must be filed, according to Education Code requirements, with the County Superintendent of Schools. These budgets are termed, respectively, the "tentative," "publication," and "final" versions. The major change in this series of presentations occurs when adjustments resulting from year-end financial reports are included in what is to be the "publication" budget. Otherwise, there are typically no major adjustments to the fiscal plan during this period.

Proposals with respect to the district faculty and non-faculty salary structures, are formulated over the same eight month period, beginning in October. Typically, salary research and recommendations are handled by special salary or bargaining committees which are locally organized specifically for this purpose. Salary recommendations and proposals may be presented at any time during the spring, frequently as late as May in some districts. The impact of the decision with respect to district salary structure is significant since salary payments constitute 80% of the average college budget.

Critical information regarding salary expenditures and operating revenues becomes available to the local board at a rather late point in this procedure. Specific changes in policy which will determine the amount of state support are not generally determined in the State Legislature until June. The budget officer will usually make the conservative, and frequently correct, assumption that there will be no change in the method and level(s) of the state foundation program. Final figures for district assessed valuation are not available until late in August, generally two weeks after the final budget has been adopted. Thus, the local board adopts a final budget two months after the beginning of the fiscal year for which it is to be effective and still in the face of uncertain operating revenues.[1]

Informational Basis

It was noted in Section II that the public school accounting structure currently used by Junior Colleges does not provide local boards the opportunity of evaluating a district budget in terms of the district's objectives nor in terms of the activities carried on to accomplish such objectives. Budget review is conducted in the context of line item analysis of objects of expenditure. Decisions to cut departmental proposals due to inadequate revenue (a frequent occurence) must be somewhat arbitrary in the absence of program information.

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[1] It should be noted that business officers, working with preliminary data from county assessors, are often able to predict the level of district assessed valuation with considerable accuracy several months prior to the time final assessments are released.

There are currently a number of organized efforts aimed at developing a program structure of budgeting in the colleges. Previous Council comment in 1967 urging the implementation of program budgeting in the Junior Colleges is still relevant in this connection.

The untimely receipt of certain critical budget information was noted above. It is possible that much of the uncertainty about the amount of state participation could be removed somewhat earlier in the budget cycle than is currently the case. However, unless district salary structures are established earlier and/or local assessments are released at an earlier date, there seems little hope or justification for a significantly earlier cycle of college budget preparation and decision.

Local Decision-Making

Besides the informational and timing constraints described above, fiscal decision-making by the local college administration and board may be limited by the existing tax structure. Much of the budget discretion now available to local authorities lies in the levying of local property tax rates. However, during 1966-67 all districts were reported to be levying the statutory maximum rate of 35¢ for general purposes.

A board which levies the 35¢ but requires additional revenues for general purposes has no recourse other than to request a tax override from its constituency. The recent decline in the number of successes for this type of election (see Appendix E) may be indicative of an ever growing preference for some form of local taxation other than the property basis. The override election may be unsuccessful for reasons having little or nothing to do with the program proposed to be supported by the added tax. The Junior College (and elementary and secondary schools) is especially handicapped by such trends since it is one of the few local jurisdictions that must subject its revenue needs to such direct scrutiny by its constituents. Counties and charter cities may establish tax rates for operating requirements at any level and without submitting rate increases to a vote of the local electorate. A majority of the more-than 3,600 special districts in California have similar (unlimited) tax setting authority. Therefore, even though college programs may be preferred by local voters over some other uses of the local property tax, the existing mechanism does not permit such a choice to be made.

It was noted in Section III that local control (the ability to respond to the educational needs and preferences of the local community) is severely restricted if districts do not have flexibility in adopting local tax rates to support unique expenditure requirements or local programs which do not fall within the scope of statewide budget considerations. Tax levies established by the local boards would be supplementary to the uniform property tax levy also discussed in Section III.

It has been argued that local college boards are not sufficiently responsive to their local constituencies as to warrant the tax setting responsibility. In this connection, it should be pointed out that the vast bulk of public fiscal and general political decision-making is subject to the same type of criticism. Membership of local boards may be changed by election if fiscal decisions are not those generally preferred by local voters.

Under existing statutes, the statutory maximum tax rates for Junior College (and other school) districts are to be removed by 1971. Local boards will then have the authority to set local rates at their own discretion. This change can result in local boards being much more responsible for decisions made regarding either expenditures or revenues. The local board may not, under such an arrangement, justify a particular budget decision on the basis that the decision is due to a fixed revenue level, determined by factors other than board action.

Systemwide Decision-Making

The systemwide or state-level review of Junior College fiscal requirements has historically consisted primarily and simply of including the colleges in overall public school support legislation. Typically, several different bills are proposed, each reflecting a different interest (i.e., School Boards Association, Junior College Association, Department of Finance, State Department of Education, etc.). Legislative consideration of school support bills is cursory in some respects due to the extreme complexity of the existing formula. The state and local sharing ratio is never known in advance. Rather, the ratio is the result of interaction among several factors, in particular the change in local assessed valuation per student.

There is currently no explicit review of Junior College fiscal needs on a systemwide basis. This contrasts with the budget decision process carried on by the University and State Colleges. Proposals from these segments, including new programs, price adjustments, changes in workload policies, etc., receive explicit consideration from both Executive and Legislative branches. The situation of the four-year segments is not strictly analogous to that of the Junior Colleges either in number, diversity, or general purpose of campuses. However, it is possible that the Board of Governors of the California Community Colleges could assume a budgetary role similar in many respects to that which the Regents and Trustees perform for the University and State Colleges, respectively.

Due to the number and diversity of colleges, the mechanism utilized by the Board of Governors must necessarily differ from that used by the governing boards of the four-year segments. The Board of Governors could not, as a practical matter and should not, as a philosophical matter engage in review of individual college budget proposals. Rather, the total review and analysis could be conducted in terms of a budget model similar to that described in Section II and Appendix C. Whatever the form of model utilized to analyze and describe systemwide expenditures, it would be developed with the appropriate adjustments, in the fall (prior to the fiscal year for which it would be effective) and along with projected student enrollments be presented in a complete Junior College budget "package" to the Department of Finance and the Legislature for further consideration. The package should include the following pertinent information: (1) model describing expenditures for the system, (2) suggested state and local sharing ratio, (3) statewide property tax levy estimated to accomplish such a ratio, and (4) proposed changes in basic policy and price factors generally applicable to the systemwide fiscal picture.

Conclusions

There is an indicated need for review and analysis of systemwide Junior College expenditures by state-level decision-making authorities. Also, there is a need for a more timely consideration of district budgets by local boards based upon improved information. In effect, the financing of Junior Colleges needs to be removed from the public school finance framework and treated in a manner similar to the other segments of higher education in California. Further, if local boards are to be responsive to the educational needs and preferences of the local community, the boards must have the flexibility to derive local public revenues without statutory restrictions.

Several specific points are suggested:

1. Adjustment in the timing of the budget cycles for local districts in order to relate information better to local fiscal decisions.

2. Continued efforts to implement a program structure for describing Junior College budget requirements.

3. Local board authority to set tax rates (without statutory restrictions) in support of programs that may not fall within the scope of state-level participation, but which are consistent with the accepted objectives of the Junior Colleges.[1]

4. Review, analysis, and formulation by the Board of Governors of the California Community Colleges of a systemwide Junior College budget proposal describing aggregate expenditures in terms of relevant price and policy variables. In proposing this systemwide budget to both Executive and Legislative branches of state government the Board of Governors would suggest a state and local sharing ratio and the necessary uniform statewide property tax required to effect this ratio.

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[1] Under existing statutes, local boards will have the authority to set tax rates without statutory restriction beginning in 1971.

SECTION VI

EQUALITY OF OPPORTUNITY

While total equality of opportunity for Junior College attendance is difficult to achieve, the following criterion does provide a yardstick for determining the effect that changes in the pattern of financing California Public Junior Colleges may have on potential students.

Criterion 5. Junior College fiscal policies should afford the opportunity for Junior College education to all individuals within the state who may profit from such education.

In order to apply this concept to a discussion of Junior College financing, it is necessary to identify first the existing inequalities of student access and college program. The following examines (1) the variation of program among the colleges, and (2) the accessibility of the colleges to students with regards both to the location of colleges and the socio-economic factors which influence the student in his choice of attendance or non-attendance. The question of student access was not explicitly considered in the 1967 study.

The current admissions policy of Junior Colleges in California is explicit with regard to the academic qualifications for enrollment: either high school graduation, or if over eighteen years of age, the capability of profiting from the instruction offered. This arrangement is frequently referred to as the "open door" policy. In addition, Junior Colleges in California are located geographically so that a relatively small number of potential students are physically located outside commuting range of one or more colleges [9]. Thus, in large measure, the criterion of equal opportunity for Junior College education would appear to be satisfied.

Student Access

There are, however, several problems inherent in the current operation of Junior Colleges that should be resolved in order to say, with any degree of confidence, that equality of opportunity does exist. First, there is the treatment of the individual outside effective commuting range of a Junior College. Several alternatives are available in such cases, including the placement of additional small college centers, residence facilities, and transportation arrangements.

The possibility of placement of numerous small college centers appears limited, however, by economic considerations. Subject, of course, to unique local conditions, there is little doubt that the capital costs of two small campuses are greater than similar costs of one large campus designed to serve the same student population. Empirical evidence, described in Appendix D, suggests also that operating costs are subject to "increasing economies" in the scale of Junior College operation. Decreasing operating costs per student in conjunction with increasing college size are evident over the entire range of college sizes (500 to 12,000 students) that were operating in California during the 1963-64 and 1966-67 academic years. Such economies are particularly significant below approximately 5,000-6,000 students.

Examination of expenditures and programs offered in California Junior Colleges during 1963-64 (see Appendix D) supports the notion that the small college offers a less diverse program, and does so at a higher cost per student, than does the larger college.

The criterion for equality of opportunity would not appear to be satisfied in the situation where an individual resides near a small Junior College but finds that the program he desires is not available at that college. This is compounded if he subsequently encounters difficulty in attending another Junior College due to the added expense of commuting or living away from home or perhaps due either to inter-district attendance agreements or the lack thereof.

Another problem inherent in locating Junior Colleges arises from the definition of "commuting range." This range is suggested to be "reasonable" if it entails not more than 30 miles or a 45-minute driving time equivalent [9]. Such a definition assumes that the individual has access to an automobile, public transportation, or transportation provided by the college. This assumption, however, does not hold true for a number of college areas. Numerous colleges throughout the state are not adequately served by public transportation. Few colleges operate their own bus transportation. Consequently, such colleges (many of which are situated in urban or suburban locales) are accessible to students only by automobile. If the individual does not then have access to an automobile, other arrangements, perhaps similar to those chosen to accommodate individuals residing outside commuting range, must be employed if this potential student is to be afforded the same attendance opportunity as others not so situated.

There are isolated instances of such arrangements (Sierra College is a prominent example) where residence halls have been established on campus and/or bus transportation provided. Off-campus residence arrangements should also be considered. Notably, the State General Fund does not now participate in the transportation efforts of Junior College districts unless their colleges serve students who reside more than 90 miles from a campus.

Another factor that may, in many cases, effectively deny equality of Junior College opportunity to the individual are the influences of a socio-economic nature which affect high school performance and the motivation to continue education beyond high school. While any graduate of a California high school or 18 year-old deemed capable of profiting from the instruction may enroll in a Junior College, many who are qualified by these standards do not enroll. Many, of course, discontinue their education during high school. Recent Council research indicates there is an attrition rate of approximately 18% among California students during the last two years of high school. Martyn has pointed out that in certain areas where there are high concentrations of disadvantaged students, as many as 66% of high school students drop-out between 9th and 12th grades [3]. While considerations relating to high school education are beyond the scope of a review of Junior College finance, knowledge of the factors related to high school performance and the post-graduation choice to continue education is obligatory if Junior Colleges are to effectively formulate and budget for information, recruitment, counseling, guidance, and student financial assistance programs.

Utilizing findings of a Council survey of 1967 California high school seniors, the following aspects of the access problem may be examined: (1) factors which influence a student in the process of becoming eligible to attend a particular type of higher education institution, (2) factors related to the decision to continue education beyond high school, (3) the type of institution preferred by the individuals who do continue, and (4) the reasons for student employment while in attendance.

Detailed findings are contained in Appendix G. In summary, high school scholastic performance and the consequent determination of "eligibility" for a particular type of institution related largely to the student's motivation and to racial and other family characteristics such as parent's education and occupational levels, but showed little relationship to family financial ability. Once admission eligibility is determined, however, the "college-going" choice by the individual who is eligible to enroll only at a Junior College relates primarily to the financial capability of the family and upon career motivation, less so upon the other family characteristics noted above. In contrast, the college-going decision by the student eligible to attend a four-year institution seems less dependent upon family finances and more dependent upon motivation and general family characteristics. The extent of work planned by students during attendance, particularly by those enrolling at a Junior College, is highly related to the family's financial ability.

These results suggest that lack of finances, as well as other factors, therefore, do prevent a number of students from enrolling at Junior Colleges, and further, that financial constraints must certainly slow progress toward completion and perhaps lower persistence rates for individuals who do enroll at Junior Colleges. From these and other research findings noted in Appendix G, the need for financial assistance programs for students in the "cost-free, open-door" California Junior Colleges appears evident, especially if the equal opportunity criterion is to be at all satisfied.

Gross financial need for Junior College students for 1966-67 (based upon standards developed by the College Scholarship Service) was estimated at nearly $15 million in a recent Council study [6]. This is, of course, an approximation. It is known, for example, that families in lower income brackets contribute more toward the college education of their children then the CSS standard anticipates. The estimate is also biased downward, however, to the extent that it does not put a value on the family earnings that may be foregone when one or more children attend college. Findings in Appendix G also suggest that the sample from which this estimate was taken was characterized by a higher income distribution than is actually the case among all Junior College students.

Financial assistance available to students in the Junior Colleges during 1966-67 was estimated at $7.3 million [6]. This aid was distributed as follows: scholarships and grants 10.9%, loans 9.2%, and work 79.9%. These estimates, received from 69 Junior Colleges, do not include off-campus employment that may have been secured by individual students on their own initiative. Notably, the bulk of financial aid was in the form of work; with significantly less available for grants and loans, particularly when compared with the four-year institutions in California.

A program of 1,000 state supported opportunity grants, to be devoted primarily to Junior College students, has been authorized and will become operational in 1969-70. At the same time, however, the Federal Educational Opportunity Grant program is being significantly reduced. Most districts have participated in the federal EOG program. Numerous districts have encountered difficulty, however, in deriving sufficient local funds to match all the EOG grants that were available to them under the program.

The above estimates, along with the findings noted from Appendix G, clearly suggest the need for increased financial assistance programs in the Junior College system, particularly in the form of grants and loans. The open-door admissions policy, on-going emphasis in programs of remediation and counseling, and frequent physical locations of campuses put the Junior Colleges in a particularly advantageous position to serve those individuals from disadvantaged social and economic backgrounds who quite often were "low achievers" during high school.

Variation among the student constituencies of Junior Colleges appears to be extreme. Some colleges draw from largely urban, "ghetto" surroundings while other colleges are located in rural or suburban areas and serve students from "higher" socio-economic backgrounds. This would suggest that state level participation in student financial aids be directed toward programs initiated and administered by the districts and colleges to provide for the unique requirements of disadvantaged students in their respective locals. State financial participation should, therefore, be provided for programs proposed by districts, rather than in the form of aid to individual students. For effective administration, the Board of Governors could develop broad guidelines to which such financial aid programs would generally conform.

In order to provide for local participation, it also appears that existing legal restrictions upon the ability of Junior Colleges to (1) grant scholarships to students (without services rendered in return) and (2) match federal grants and loans to students from local public funds need to be amended. The "fifty-percent" expenditure requirement that at least one-half of the Junior College district budget be devoted to teacher's salaries should also be amended or eliminated. Both provisions limit the flexibility of colleges in developing student-oriented programs that are non-classroom in nature and doubtless hinder efforts by local boards to obtain the "best" use of their available funds.

Program Variation

The equality of opportunity criterion may be examined in the slightly different context of a fourth factor that comes into play after the student has enrolled. This factor may be measured by variations in the nature of instructional and other services provided students at different colleges in the system.

There is some doubt that the individual entering a small Junior College that offers 30 subject fields of instruction has the same opportunity as the individual who enters the large college and is faced with 55 different subject fields from which to choose his program. Data examined in Appendix D indicate that not only do the larger Junior Colleges offer a greater number of different subject fields, but within these subject fields they (large colleges) offer a more diverse selection of courses. It also appears that the transfer student is afforded in either the small or large Junior College, a sufficient variety of "survey" and other basic courses as to accomplish his objective of moving to a four-year institution after two years of Junior College work. The terminal student, on the other hand, may find that offerings in certain technical-vocational subjects are limited or unavailable in the small college.

The findings are less conclusive, but do suggest that another characteristic of small college operation (in contrast to the larger colleges) may be the inability to offer certain supplementary courses in the liberal arts designed to "broaden" the general education of the student. Larger Junior Colleges reported offering approximately three times the number of different courses per student field in the liberal arts than did the small Junior Colleges.

Variation in program among Junior Colleges depends upon numerous factors in addition to size of institution, not the least of which are the program preferences of the local constituency. Other indices of program variation involve quantitative measurement of the instructional program. The 1967 Council study indicated that the instructional program of the Junior College system (as measured by indices of class size, faculty workload, and faculty salaries) was comparable to the lower division program in the State College system. All indices, however, varied substantially among the 71 Junior College campuses examined.

Variation in the type of program among colleges is not at all inappropriate. There is no apparent reason why all Junior Colleges ought to offer equivalent curricula. Within the broad objectives of the two-year program, the individual college normally presents the program most appropriate to its local constituency. And, the nature of these constituencies varies substantially among colleges.

As noted in Section II, no cost information is readily available on the important functions of guidance, counseling, and remedial instruction. Many students, disadvantaged in academic ability as well as in the socio-economic sense, require remedial instruction and/or guidance and counseling in amounts somewhat greater than students not similarly situated if equal opportunity is to be a reality. Findings of recent research have questioned the effectiveness of many such programs that have been conducted in the colleges [1,10]. Without accurate cost information, however, such assessment may possibly mean that these programs were insufficiently funded to accomplish objectives that are inevitably high cost. Remedial instruction and guidance that in some instances must approach a "one to one" tutorial situation to be effective, are indicative of such high cost programs. If the guidance and counseling objectives are accepted (and they are consistent with the equal opportunity criterion), insufficient funding and program failure represents an inefficient use of funds available to the Junior Colleges.

Conclusions

To provide equality of opportunity it is necessary to insure that geographic and socio-economic factors do not prevent potential students from attending the Junior Colleges. Findings indicate that to accomplish such objectives requires investment in programs of financial aid for the economically disadvantaged, transportation or residence assistance for those who may be geographically disadvantaged, and remediation and guidance for the academically and socially disadvantaged.

At the same time, it would appear desirable to avoid the establishment of numerous small Junior College campuses in the development of additional capacity to accommodate future enrollment increases. (A general policy of this nature would, of course, be subject to exceptions for unique local conditions such as restricted sites or construction constraints.) Evidence indicates that such small campus centers require greater capital investment per student than do larger colleges and can offer programs comparable to the larger colleges only with much higher operating expenditures per student.

Expenditure variations which may arise in those districts with higher-than-average numbers of socially and academically disadvantaged students may be accounted for in the general budget consideration. To do so, the budget analysis must encompass variables describing those costs for tutorial instruction, remediation, counseling, and guidance which may be considerably higher in some districts than in others. Such information is not currently available and should be included as an integral part of any program budget structure that may be developed.

Financial assistance programs for the economically disadvantaged who may attend a Junior College need to be increased in number and amount. These programs should be initiated and administered by local districts with the consultation and concurrence of the Board of Governors. State financial participation should be provided in the form of support for specific programs proposed by districts. For effective administration, the Board of Governors should develop broad guidelines to which such financial aid programs would generally conform.

To provide for local participation in financial aid programs, Junior College districts should have the legal authority to use public funds (1) for matching federal grants and loans to students and (2) to grant scholarships and other financial aids to students which do not require a service to be rendered in return. Finally, the statute setting teacher salary costs at not less than 50% of the total current expense of education should be repealed or otherwise modified so as to provide districts the flexibility to conduct student-oriented services of a non-classroom nature.

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APPENDICES

APPENDIX A

I. EXISTING COORDINATING COUNCIL POLICY WITH RESPECT TO THE FINANCING OF CALIFORNIA PUBLIC JUNIOR COLLEGES

The following resolutions were adopted by the Coordinating Council for Higher Education after review of the 1967 study on Financing California Public Junior Colleges. These resolutions represent existing Council policy with respect to college finance. The resolution related to Financing of Current Operations was adopted on March 28, 1967.

Resolution on Financing Junior College Current Operations

WHEREAS, The Council directed its staff to study the financing of Junior Colleges, including possible revision of the present system as well as new methods; and

WHEREAS, The Council staff has conducted a year-long study of the best possible method of financing California's Junior Colleges; and

WHEREAS, The Council believes that an essential ingredient to the continued growth and development of the Junior Colleges is the provision of adequate financial support: now, therefore, be it

RESOLVED, That the Coordinating Council for Higher Education advises the Governor, the Legislature, and the State Board of Education that the following means of providing financial support to the Junior Colleges is preferable.

1. A financial measure of the cost per student unit of an adequate educational program should be established. This measure, to be known as the "Program Amount," should be reflective of the actual costs of the educational program and should be adjusted annually on the basis of changes in price-related and policy-related cost factors.

2. Two "Program Amounts" should be established--one for Junior College districts with less than 1,000 units of average daily attendance (or the equivalent size in the student measure used) and one for all

other districts. (The Program Amounts should be established and adjusted as described in Chapter V of the Council staff report entitled, "Financing California's Public Junior Colleges, Part I--Current Operations," and should be based upon the "current expense of education" as defined in the Junior College Accounting Manual, and should include the expense of graded classes).

3. A student measure based upon a course class hour of enrollment, rather than attendance, should be established as the measurement of the educational workload. This measure (the Weekly Student Class Hour) should not distinguish whether students are residents in the district, full-time or part-time, or of any particular age.

4. A division between the state and the local district of the Program Amount should be developed, with the state's share based upon equalization and the local share upon a statewide computational property tax rate levied against an adjusted district assessed valuation; provided that the State Board should estimate and recommend to the Governor and the Legislature the statewide funding required to establish the state's share in the fiscal year 1967-68 as 35% of the total, increasing such share by an additional 5% in each succeeding fiscal year until the state's share reaches 45%.

5. All districts wishing, or needing, to operate at a level beyond the Program Amount should have the following two options:

   A. The district could obtain the desired increase through district voter approval of an operational tax.

   B. The district could obtain the desired increase by making a request of the State Board of Education and if this request were approved the additional amount would be shared between the state and the local district.

6. Full-time out-of-state students should pay a tuition equal to the Program Amount and part-time out-of-state students should pay a tuition amount prorated according to the number of units for which the student is enrolled. (Districts could exempt

non-residents who are both citizens and residents of a foreign country or are military personnel or dependents of military personnel.)

7. Students attending non-graded classes are not to be counted in determining the state share. Local district may charge tuition to cover the full cost of non-graded classes.

8. Fees may be charged and retained by the local district's governing board to cover the cost of student parking and health services; and be it further

RESOLVED, That:

1. The account classification system used by the Junior Colleges should be revised to correspond with that generally used in institutions of higher education and to separately account the elements of each program.

2. The calendar for the preparation of local college budgets should be revised in order to permit local boards to review and approve these budgets approximately nine months prior to commencement of the budget year.

3. The statute limiting teacher salary costs to not less than 50% of the total current expense of education should be repealed; and be it further

RESOLVED, That the State Board of Education, with the advice of representatives of Junior College districts local boards, should initiate the following actions in order to implement program budgeting in the Junior Colleges:

1. Formulate broad state educational objectives to be reflected in the state-local fiscal relationships.

2. Ascertain information that measures and explains program activity and performance for each program element.

3. Stimulate automation of cost and performance information systems.

4. Stimulate establishment and adequate staffing of institutional research and analytical studies offices at the local and state level.

5. Institute a system of long-range program planning including all cost implications of present and planned changes in program performance.

II. CRITERIA AND RELATED FINDINGS OF 1967 STUDY OF THE FINANCING OF CALIFORNIA PUBLIC JUNIOR COLLEGES

Criterion 1. THE STATE-LOCAL FISCAL RELATIONSHIP SHOULD AFFORD ALL ELIGIBLE INDIVIDUALS WITHIN THE STATE AN EQUAL OPPORTUNITY FOR JUNIOR COLLEGE EDUCATION.

Findings Related to the Provisions of Existing Educational Program

1. Class size, average faculty salary and laboratory emphasis were the most significant factors in determining variations in Junior College instructional costs. Neither program emphasis nor faculty contact hourload were significant. There were no apparent economies-of-scale.

2. District size was not a significant cost factor over 1,000 a.d.a. Although below 1,000 a.d.a. unit costs averaged approximately $200 higher per a.d.a.

3. Faculty salaries vary significantly between districts, but higher salaries are paid in the larger districts, though not necessarily according to local ability (assessed valuation per a.d.a.).

4. Multi-college districts tended to have relatively lower administrative costs than single-college districts.

5. No relationship could be discovered between the cost of educating defined adults and the differential costs of non-graded (vs. graded) instruction and/or adult education.

6. Enrollment, rather than attendance, is an appropriate student measure; and the contact hour, rather than credit hour, is the most accurate unit for developing average Junior College costs.

7. Instructional characteristics (class size, faculty load, faculty salary) for Junior Colleges during the Fall of 1963 were comparable to similar measures for lower division in the State Colleges and the University.

8. The real level of Junior College unit expenditure (price changes eliminated) for 1964-65 was slightly below that level reported in 1954-55. However, real unit expenditures during the intervening years, especially 1959-60, appear to have been much higher.

9. Projection of the 1963-64 real level of instructional program and expenditure (including price increases) results in an average unit cost of $678 per a.d.a. (or $38.80 per weekly student contact hour) for 1967-68. Average costs for districts below 1,000 a.d.a. would be approximately $950 per a.d.a.

10. Changes in the "foundation amount" since 1951-52 have provided for price increases, but not for program increases.

Criterion 2. REVENUE TO SUPPORT THE STATE-LOCAL RELATIONSHIP SHOULD BE EXACTED EQUITABLY FROM THOSE CONTRIBUTORS INVOLVED: BASED PRIMARILY UPON (1) ABILITY-TO-PAY (AS BETWEEN DISTRICTS AND AS BETWEEN INCOME CLASSES) AND, (2) TO THE EXTENT APPROPRIATE, BENEFITS RECEIVED.

Findings on Sources of Support

11. Although fees for defined adults are permitted by law, only one-third of the Junior Colleges charged such fees during 1964-65; average charges were less than one-half the cost of instruction.

12. Tuition charges to out-of-state students are based upon actual costs previously recorded and may be as much as 5% below current costs of instruction.

13. Only ten of 71 districts charge the permissive health service and parking fees. Such a fee may not exceed $10.

14. The combined tax burden of those taxes which support the Junior Colleges is regressive throughout almost the entire range of annual incomes below $15,000.

15. There is marked variation in the local financial ability of Junior College districts when measured by assessed valuation per a.d.a. In 1964-65, the wealthiest district had approximately 10 times the ability of the poorest district.

16. There was no significant relationship between the tax basis (assessed valuation per a.d.a.) and the source from which taxes were paid (personal income per capita) in Junior College districts during 1964-65.

17. There is wide variation in the ratio of population to students in Junior College districts. Total property tax rates for local services are unequal between urban and rural Junior College district areas.

18. During 1964-65, taxpayers in Junior College districts paid an average property tax of 52¢ per $100 of assessed valuation for all college purposes. Tax rates varied from a low of 25¢ to a high of 97¢.

19. Of the total average district levy for 1964-65, 32¢ was required to support the current expense of education. By contrast, taxpayers in non-district areas were levied a rate of only 11¢ for the same purpose.

20. The state foundation program generally provides more aid to the less wealthy districts. The provision of basic aid, however, tends to detract from the purpose of equalization.

21. The total state share of the current expense of education for the Junior Colleges increased from 27% in 1962-63 to 32% in 1964-65.

22. In the Fall of 1963, the less-able districts with an average tax rate of 44¢, paid lower faculty salaries, had larger class sizes, and lower overall faculty time, than did the more-able districts with a tax rate of 37¢.

23. During 1964-65, the more-able districts with a tax rate of 42¢ spent $766 per a.d.a. while the less-able districts levied 43¢, but were able to spend only $579 per a.d.a.

Criterion 3. THE STATE-LOCAL FISCAL RELATIONSHIP SHOULD ASSURE THE OPTIMUM UTILIZATION OF AVAILABLE RESOURCES.

Criterion 4. THE STATE-LOCAL FISCAL RELATIONSHIP SHOULD AFFORD MAXIMUM FLEXIBILITY FOR EDUCATIONAL AND OPERATIONAL NEEDS AT THE LOCAL LEVEL AND ALSO REFLECT BROAD STATE EDUCATIONAL OBJECTIVES AND POLICIES.

Criterion 5. THE STATE-LOCAL FISCAL RELATIONSHIP SHOULD BE DEFINED AS SIMPLY AND CONCISELY AS POSSIBLE AND BE SUFFICIENTLY STABLE TO ENCOURAGE LONG-RANGE EDUCATIONAL PLANNING: ALL IMPLICATIONS OF PROPOSED CHANGES OR ADJUSTMENTS SHOULD BE EASILY IDENTIFIABLE.

Findings of Optimum Resource Allocation

24. The most significant program cost centers in the Junior Colleges are not separately accounted and reported and thus no information is available as to how available resources are utilized by the institutional programs and program elements.

25. The account structure used in the Junior Colleges differs markedly from that used by the University, the State Colleges, and institutions of higher education in general, thus making cost analyses involving the three segments difficult.

26. Although the conduct of institutional studies has been expanded the present budgetary process fails to encompass certain essential elements including: (1) an explicit definition of program objectives; (2) the collection of information which measures program activity and performance in achieving program objectives; and (3) the analysis of costs and benefits of alternate courses of action in achieving program objectives.

27. The length of the annual budget preparation cycle in the Junior Colleges is approximately ten months and culminates in governing board approval after the budget year has already commended. This cycle precludes the compilation of statewide financial figures in time to provide the Governor or Legislature with a basis for determining an adequate state contribution.

28. Current statutes limiting teacher salary costs to not less than 50% of the total current expense of education unduly restrict the flexibility of the governing board to allocate funds.

APPENDIX B

ADVISORY COMMITTEE FOR REVIEW OF JUNIOR COLLEGE FINANCE

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Assistant Vice President and University Dean of Educational Relations
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*Mr. John Kehoe, Director of Governmental Affairs, substituted for Mr. Macias.

APPENDIX C

CROSS SECTION ANALYSIS OF JUNIOR COLLEGE EXPENDITURE DATA

The following series of analyses utilize data for the years 1963-64 and 1966-67.[1] Variation in the levels of expenditure per student exhibited by different districts is the principal topic. Three multiple regression analyses are examined, each of which utilizes expenditures per student as the dependent variable. Eight independent variables are specified to be characteristic of the relevant financial and program factors that influence expenditure levels. Data for both years are run (1) for all independent variables, (2) for the program variables only, and (3) for the financial variables only. Finally, a budget model is explored for possible use in estimating expenditure allocations for the Junior College system.

The specific form of the analysis is as follows:

$$Y = aX_1^b, X_2^c, X_3^d, X_4^e, X_5^f, X_6^g, X_7^h, X_8^i$$

where,

Y = Expenditures per student

PROGRAM VARIABLES

X_1 = Average college size in the district
X_2 = Average faculty salary in district
X_3 = Proportion of curriculum in technical-vocational instruction
X_4 = Student:faculty ratio

FINANCIAL VARIABLES

X_5 = Assessed valuation/students
X_6 = Local district tax rate
X_7 = State aid/student

X_8 = Proportion of instruction in day-graded courses

and where,

a, b, c, d, e, f, g, h, i are constants. This function is readily converted to logarithms and is then fitted by the usual linear regression techniques.

The results for each of the two years are generally consistent (see Table C-1). The best prediction is obtained when all eight independent variables are included in equation (1). For both years, 66 percent of expenditure variation is statistically "explained" by an equation of this form. As a group, the program variables (equation (2)) exhibit a slightly greater relationship to the dependent expenditure variable than do the financial variables (equation (3)).

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[1] The data are derived from reports issued by the California State Department of Education.

Average college size is significantly and negatively related to unit expenditure in the 1963-64 data, less so in the 1966-67 analysis.[1] In the latter case, a significant and negative coefficient for student: faculty ratio suggests that this variable may carry some of the effect otherwise attributable to size. The two variables (size and "ratio") are significantly correlated (r = .449) on one another (see Table C-2).

Table C-1

ANALYSIS OF VARIABLES
RELATED TO TOTAL EXPENDITURES PER STUDENT

(1) ALL VARIABLES: $Y = aX_1^b, X_2^c, X_3^d, X_4^e, X_5^f, X_6^g, X_7^h, X_8^i$

Variable	1966-67 Data Regression Coefficient	 Beta Coefficient	1963-64 Data Regression Coefficient	 Beta Coefficient
Y (expenditure/student)	1.6509	(constant)	-.1441	(constant)
X_1 (colllege size)	-.0200	-.100	-.0930	-.460
X_2 (average faculty salary)	.3383	.178	.8937	.417
X_3 (curriculum type)	-.0287	-.075	.2039	.240
X_4 (student:faculty ratio)	-.4262	-.501	-.0747	-.144
X_5 (assessed valuation/ADA)	.2037	.475	.1391	.298
X_6 (local district tax rate)	.0592	.063	.0193	.200
X_7 (state aid/ADA)	.0522	.110	-.1736	-.356
X_8 (proportion of instruction in day-graded class)	-.0373	-.026	-.2710	-.154
Standard Error of Estimate =	.0439		.0511	
Coefficient of Determination =	.656		.663	

(2) PROGRAM VARIABLES: $Y = aX_1^b, X_2^c, X_3^d, X_4^e$

Variable	1966-67 Data Regression Coefficient	 Beta Coefficient	1963-64 Data Regression Coefficient	 Beta Coefficient
Y (expenditure/student)	2.0173	(constant)	-.2840	(constant)
X_1 (college size)	-.0419	-.210	-.1490	-.738
X_2 (average faculty salary)	.4469	.236	.9376	.437
X_3 (curriculum type)	-.0167	-.044	.1276	.150
X_4 (student:faculty ratio)	-.5405	-.635	-.0502	-.097
Standard Error of Estimate =	.0510		.0662	
Coefficient of Determination =	.535		.434	

(3) FINANCIAL VARIABLES: $Y = aX_5^f, X_6^g, X_7^h$

Variable	1966-67 Data Regression Coefficient	 Beta Coefficient	1963-64 Data Regression Coefficient	 Beta Coefficient
Y (expenditure/student)	1.6064	(constant)	2.4900	(constant)
X_5 (assessed valuation/ADA)	.3801	.886	.2583	.553
X_6 (local district tax rate)	.0624	.067	.0446	.046
X_7 (state aid/ADA)	.1915	.403	-.1199	-.246
Standard Error of Estimate =	.0548		.0667	
Coefficient of Determination =	.462		.427	

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[1] The regression coefficient measures the average number of units increase or decrease in the dependent variable which occur with each increase of a specified unit in the independent variable. (The equations in Table C-I are measured in logarithms.) Since each independent variable is specified in different units, the beta coefficient is employed to allow comparison of the relative importance of each variable. A positive beta coefficient indicates that the dependent variable increases as the independent variable increases (or both variables decrease together). Conversely, a negative beta coefficient indicates that increases in the dependent variable are associated with decreases in the independent variable. In simple correlation (only two variables) the value of the beta coefficient is the same as that of the correlation coefficient (r).

The average faculty salary paid in a district was significantly related to the expenditure level during 1963-64 but in a positive way. The variable specifying curriculum type (proportion of instruction in technical-vocational curriculum) does not appear to be as significantly related to district unit expenditures as its inherent high cost might suggest. A variable specifying the (higher cost) proportion of day-graded instruction is not significantly related to unit expenditures. Such results may be due in part to effects of multicolinearity among the independent variables (see again Table B-2) and/or imprecise specification of the two variables (X_3 and X_8).

Local financial ability (assessed valuation per student) is a significant and positive determinant of expenditure variation in both years. The local district tax rate has little apparent effect, however.

Table C-2

CORRELATION COEFFICIENTS FOR 1966-67 DATA

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
Y	1.000	-.380	.140	-.128	-.653	.670	.192	-.104	.067
X_1		1.000	.428	.101	.449	-.294	-.001	-.115	.066
X_2			1.000	-.076	.142	.054	-.113	-.275	.016
X_3				1.000	-.027	-.047	.010	.090	.062
X_4					1.000	-.324	-.151	-.112	-.603
X_5						1.000	-.043	-.656	-.053
X_6							1.000	-.163	-.245
X_7								1.000	.044
X_8									1.000

State support (through the Foundation Program) is seemingly ineffective as an equalization instrument. If it truly equalized, it would presumably be unrelated to expenditure level variation among the districts. Such is not the case, however, for the 1963-64 data. The amount of state aid is negatively related to the dependent variable, during 1963-64, i.e., those districts receiving greater amounts of state aid, are characterized by lower unit expenditures. A reverse, but significant, relationship is indicated for 1966-67.

The foundation program calculation, described in Section III, results in the following financing patterns for three hypothetical districts:

	District A	District B	District C
Average Daily Attendance (A.D.A.)	2,000	2,000	2,000
Assessed Valuation	$100,000,000	$300,000,000	$500,000,000
Assessed Valuation Per A.D.A.	50,000	150,000	250,000
Foundation Program Per A.D.A.	628	628	628
District Aid (A/V x 25¢) Per A.D.A.	125	375	625
State Basic Aid Per A.D.A.	125	125	125
State Equalization Aid Per A.D.A.	378	128	-

Employment of a 25¢ local tax rate, along with existing levels of state support, results in $628 per student being available for districts A and B. In contrast, district C has $750 available from similar sources even though it receives only "basic" state aid. Further, such available funding may have little to do with the actual level of expenditures per student which a district requires or feels that it requires. For example, the average systemwide expenditure per student during 1968-69 are estimated at $777 (see Appendix E). To achieve such an expenditure level would require tax rates of 55¢ for district A, 35¢ for district B, and 26¢ for district C.

The variations in local financial ability (assessed valuation per student) in the above example are not unrealistic. During 1966-67, local ability ranged from $46,000 per student in the "least able" district to $389,000 per student in the "most able" district.

Specific examples of the impact on districts of the state foundation program are presented in Table C-3. The financially "able" districts which receive only state basic aid expended $133 more per student during 1966-67 than did the less able "equalization" districts. The primary reason for this expenditure differential appears to be the factor of local financial ability. Another comparison examines districts falling in the first quartile (bottom one-fourth of districts) and fourth quartile (top one-fourth) according to financial ability (see also Table C-3). The "high ability" districts expended $130 per student more than the similar unit expenditure reported by "low ability" districts. This was accomplished with no greater tax effort and with only $149 per student in state aid as compared to $303 per student in state aid received by the average low ability district.

Greater tax effort does appear to result in a somewhat higher expenditure level. This comparison, however, is distorted by the inclusion, among the "high effort" quartile, of two districts that expended more than $1,000 per student due in part to costs of special programs. In any case, high tax effort does not appear to be the consequence of low financial ability. Given the statutory maximum tax rate for general purposes, there is little the local board may effectively do in order to compensate for a low district assessment.

Table C-3

COMPARISON OF DISTRICT FINANCIAL VARIABLES ACCORDING TO ABILITY, TAX EFFORT, EXPENDITURE LEVEL, AND "STATE AID" TYPE, 1966-67

	ABILITY		EFFORT		COST		AID TYPE	
	First Quartile	Fourth Quartile	First Quartile	Fourth Quartile	First Quartile	Fourth Quartile	Basic	Equalization
Number of Districts	16	16	15	15	16	16	11	54
Average District ADA	4,837	3,436	3,778	3,878	4,451	3,564	3,706	4,085
J. C. Tax Rate	.461	.466	.401	.634	.471	.503	.469	.449
Assessed Valuation/ADA	$87,488	$235,924	$168,986	$166,476	$112,949	209,496	$263,907	$131,122
Total Current Expense/ADA	$682	$815	$708	$809	$589	$897	$822	$689
Administration/ADA	26	53	34	36	29	51	55	31
Instruction	505	597	539	570	490	640	604	531
Maintenance & Operation of Plant	71	106	95	81	117	110	117	81
Capital Outlay Expense	110,242	353,130	193,676	432,820	344,779	388,485	241,932	296,332
Capital Outlay/ADA	28	200	49	178	70	143	149	72
Community Services as Percent of Total	3.5%	7.3%	2.6%	2.9%	3.6%	5.6%	4.5%	3.2%
State Aid as Percent of Cost	.452	.198	.304	.284	.410	.217	.150	.380
Total State Aid per ADA	$303	$149	$202	$212	$244	$192	$123	$250
(Equalization Aid/ADA)	178	24	77	87	123	63	- 2	125

Expenditures for the function of instruction are significantly related to local financial ability (r = .310), less related local tax effort and not at all related to either district organization (see Table C-4) or the amount of state aid received by the district. Unit expenditures for general administration are even more significantly related to local financial ability. Unified districts report the lowest unit administrative expenditure, some of which is due apparently to their large average size of operation. Administrative costs per student do not depend upon local tax rates, however. Expenditures for plant maintenance appear to exhibit all of the same relationships as are true for administration. Unit costs for administration, instruction and plant maintenance are significantly and negatively related to college size (see Appendix D).

Budget Model

The following examines a possible budget model for estimating Junior College expenditure levels. Any model of this type should be simple, but at the same time, sensitive to the important determinants of expenditure variation among the colleges. With such a model, the Board of Governors could, hopefully, estimate systemwide needs as well as establish a basis for estimating individual college expenditure levels to be supported from the State General Fund and uniform property tax levies.

The existing foundation program calculation includes distinctions which describe the geographical origin and age of students, and the foundation amount is distinguished only by size of college below 1,000 A.D.A. and age

Table C-4

COMPARISON OF EXPENDITURES, ABILITY AND TAX RATES BY TYPE OF DISTRICT ORGANIZATION, 1966-67

	SEPARATE DISTRICTS		
	Multi-college Districts	Single College Districts	Unified Districts
Number of Districts	7	51	7
Number of Colleges	18	51	8
Total ADA	$118,441	$172,271	$48,273
Average College Size	(6,580)	(3,380)	(6,040)
Administration			
(per ADA)	$27	$39	$22
(percent)	3.8%	5.0%	3.7%
Instruction/ADA	$554	$541	$550
(percent)	77.8%	75.7%	80.1%
Health Services/ADA	$3	$2	$3
(percent)	0.5%	0.3%	0.5%
Transportation/ADA	$5	$8	$ .18
(percent)	0.6%	0.9%	0.0%
Maintenance and Operation of Plant/ADA	$75	$91	$63
(percent)	11.2%	12.5%	10.6%
Fixed Charges/ADA	$56	$46	$32
(percent)	7.2%	6.5%	5.3%
Total Current Expense	$712	$715	$687
Capital Outlay/ADA	$64	$61	$8
Financial Ability	$148,625	$155,846	$100,752
Tax Effort	.475	.489	-
Average Salary	$10,639	$10,685	$10,860
ADA/FTE	34.9	36.2	37.6
State Aid/Cost	.38	.33	.39
State Aid/ADA	$213	$225	$256
Equalization Aid/ADA	$ 88	$102	$131

of students. Obviously, these are not the factors which cause variation in college expenditures.

Expenditures are primarily a function of the number of students enrolled: to recognize this, the model should be described in terms of expenditures per student equivalent enrolled. Other important variables are

1. Average size of college(s) in the district
2. Type of curriculum (the proportion of total enrollment that is reported in the technical-vocational curriculum)
3. Emphasis on guidance and counseling
4. Emphasis on remediation and tutorial instruction

As shown in the analysis of scale (Appendix D) it is significantly more expensive for the small college (than it is for large colleges) to conduct a program of given breadth. The average college size in a district should, therefore, be considered. That college conducting a relatively large number of vocational programs will be inherently more expensive than the college which offers instruction primarily in the social sciences and humanities. A third factor which may cause significant variation in expenditures is the relative effort put forth by the individual district for guidance and counseling. This activity is recognized as one of the major functions of the Junior College. As noted, however, costs for this function are included within the total cost of education and are not separable under existing accounting procedures. Factor four would describe the proportion of instruction that is devoted to highly expensive programs of remediation and tutorial instruction. No data are available describing the cost of such instruction. Some portion of the difference in student:faculty ratios between districts may be attributable to different emphases upon such instruction, however.

Equation (2) of Table C-1 provides an approximate empirical test of the above model. Variables describing college size, type of curriculum and student:faculty ratio provide approximate indexes for all of the factors in the model except guidance and counseling. Recent research (see CCHE study #67-15, Appendix B) indicates that faculty workload policies are generally similar among different districts. The faculty:student ratio, therefore, reflects primarily average class size which, in turn, reflects the size of college, predominant type of curriculum offered, and course sectioning policies. This equation is found to possess significant predictive power, "explaining" approximately one-half of expenditure variation among districts for both years examined.

Note that the inclusion of certain other variables such as local district financial ability would improve the predictive powers of the model (see equation (1), Table C-1). This suggests that variations in district financial ability _have_, in the past, been a significant cause of variations in district expenditure levels. It does _not_ suggest, however, that financial ability _should_ be a significant determinant of expenditure levels. The concept of equalization among districts is to render such variations in local financial ability insignificant. Therefore, certain variables which may have been significant predictors of expenditures in the past are not appropriate for inclusion in the model.

The differences between actual district expenditures and those estimated by the model for 1966-67 are shown in Table C-5. As expected by the nature of the statistical procedure, some (31) districts actually expended much more than the model would have provided while (34) others expended less. The differences are due in some cases to unique or uncommon programs which may be emphasized in particular districts and exhibit an extreme cost level. In other cases, districts may simply be more economical than the average district (due perhaps to larger than average class sizes) or expend more than the average due to greater financial ability.

A model of the type examined here could include annual adjustments for systemwide price and policy changes by adjusting the constant term of the regression equation. Such adjustments, estimated by the Board of Governors and proposed to the Legislature, would consist of price changes in (1) equipment, supplies, and operating expenses; (2) merit (in grade) salary adjustments and promotions (between grade); and (3) pertinent policy changes, such as adjustments to salary schedules, changes in faculty workload or course sectioning policies, and/or broad program changes.

The implications of a uniform statewide tax are also shown in Table C-5. To derive the local property tax share reported for the system during 1966-67 would have required a statewide property tax of approximately \$.35 per \$100 of assessed valuation. This figure is assumed to be levied in all districts. For those 31 districts which reported higher actual expenditures than those estimated by the model, the additional local property tax levies needed to derive the difference were calculated. The resulting calculated property tax levies (see column 4) show considerably less variation between districts than was the case for actual taxes levied during 1966-67:

Actual Tax Rates[1]

Average	\$ .4540
Standard Deviation	.1078
High Rate	.8500
Low Rate	.3500

Calculated Tax Rates (using budget model, uniform statewide tax)

Average	\$ .3763
Standard Deviation	.0399
High Rate	.5540
Low Rate	.3500

The above budget model and taxing technique require substantial refinement before being totally acceptable for practical application. The general method, however, is consistent with the criteria established for this study and provides results which appear preferable to those experienced from the existing foundation program method.

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[1] The rates include taxes for all purposes other than community services and bond interest and principle redemption.

Table C-5

APPLICATION OF BUDGET MODEL AND UNIFORM TAX LEVY TO ACTUAL JUNIOR COLLEGE EXPENDITURES
1966-67

(1) ACTUAL EXPENDITURES (per student)	(2) CALCULATED EXPENDITURES (per student)	(3) [(2) - (1)] DIFFERENCE (per student)	(4) CALCULATED DISTRICT TAX RATE ($100 of Assessed Valuation)
$ 675	$ 639	$ -36	$ .369
714	683	-31	.381
691	634	-57	.471
622	678	+56	.350
624	680	+56	.350
569	571	+ 2	.350
1,050	823	-227	.554
797	753	-44	.382
750	730	-20	.364
665	638	-27	.379
628	720	+92	.350
744	657	-87	.435
705	621	-84	.448
682	690	+ 8	.350
638	736	+98	.350
738	718	-20	.376
647	571	-76	.421
674	731	+57	.350
668	655	-13	.361
756	688	-68	.388
694	684	-10	.363
615	660	+45	.350
774	683	-91	.428
701	711	+10	.350
614	657	+43	.350
585	620	+35	.350
698	643	-55	.385
695	732	+37	.350
60[illegible]	595	+ 9	.350
618	548	-70	.424
667	683	+16	.350
655	673	+18	.350
581	598	+17	.350
654	699	+45	.350
648	706	+58	.350
691	702	+11	.350
707	689	-18	.370
621	622	+ 1	.350
576	602	+26	.350
708	707	- 1	.351
814	756	-58	.394
697	749	+52	.350
737	844	+107	.350
720	758	+38	.350
556	669	+113	.350
1,046	774	-272	.473
713	675	-38	.373
677	776	+99	.350
682	798	+116	.350
858	760	-98	.398
765	721	-44	.380
1,163	983	-180	.405
678	809	+131	.350
1,020	886	-134	.408
544	734	+180	.350
923	807	-116	.414
708	714	+ 6	.350
1,001	866	-135	.421
599	717	+118	.350
602	556	-46	.406
571	548	-23	.384
1,159	1,023	-136	.454
639	803	+164	.350
547	571	+24	.350
698	828	+130	.350

APPENDIX D

THE CONSIDERATION OF SCALE IN JUNIOR COLLEGE OPERATION

Virtually all aspects of the Junior College instructional program, including both classroom teaching and indirect support such as classroom maintenance and capital costs appear to be subject to increasing economies in the scale of operation; i.e., unit costs of the program decrease as size (enrollment) increases. Empirical proof of this proposition is rather difficult to accumulate, however, for in order to say anything about decreasing unit costs, it must be assumed that the quality and diversity of instruction offered at all colleges examined are equivalent regardless of college size. If small institutions can operate economically only by limiting their curriculum (to less than that offered at larger institutions), then it may be concluded that economies-of-scale in larger operations do in fact exist. However, if this is the practice among the smaller colleges, empirical examination of unit costs will not reveal such economies since the programs of the variously-sized colleges are not comparable. The following discussion, therefore, includes the topic of the range and diversity of curriculum (program) as well as the more obvious considerations of operating and capital costs.

Range of Program

There is evidence that the smaller Junior Colleges do not offer the same diversity or range of courses as do the larger of the Junior Colleges.[1] Not only do the larger Junior Colleges offer a greater number of different subject fields, but within these subject fields they offer a more diverse menu of courses.[2] Using fall 1963 data for California Junior Colleges, the number of subject fields correlated positively (and significantly) with college size (r=.760) while a measure of courses per subject field also correlated significantly with college size (r=.807).[3]

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[1] In this analysis, the terms "range" and "diversity" are generally defined by the number of courses and different subject fields offered by the college.

[2] The "subject fields" used here are based upon the Standard Classification of Subject Fields and Services used in the 1965 California Public Higher Education Cost and Statistical Analysis. Examples of different subject fields in the Social Sciences:

3200	Economics
3300	Geography
3400	History
3500	Political Science

[3] The measure is actually course credit hours per subject field; however, the average number of credit hours per course should not vary sufficiently among colleges as to distort the use of this measure as an index of the number of courses.

Table D-1 indicates the magnitude of the differences in instructional program by size of college. "Large" and "small" colleges are defined as those falling in the fourth and first quartiles, respectively, of a sample of 71 California Junior Colleges distributed according to size for fall 1963. The large colleges held nearly five times the number of courses, on the average, that the small colleges reported. Note also that the large colleges offered an average of 54 subject fields of instruction while the small colleges averaged only 33 such fields.

Table D-1

RELATIONSHIPS OF COLLEGE SIZE AND INSTRUCTIONAL PROGRAM, CALIFORNIA JUNIOR COLLEGES, FALL 1963

	Large Colleges	Systemwide	Small Colleges
	(unweighted averages)		
TOTAL CURRICULUM			
Number of subject fields	53.6	43.2	32.7
Number of course credit hours	1221.0	686.9	276.9
Course credit hours per subject field	22.5	14.9	8.6
LIBERAL ARTS			
Number of subject fields	23.5	22.1	21.0
Number of course credit hours	566.7	338.8	166.7
Course credit hours per subject field	24.1	15.3	7.9
TRADE-TECHNICAL AND BUSINESS			
Number of subject fields	30.1	21.1	11.7
Number of course credit hours	654.3	348.1	110.2
Course credit hours per subject field	21.9	15.1	9.9

SOURCE: CCHE, Cost and Statistical Study, 1965.

There is no apparent reason why all Junior Colleges ought to offer equivalent curricula. However, the student attending the larger Junior College does have a larger number of courses from which to develop his schedule than does his counterpart attending a small Junior College.

The data indicate there was only minor variation in the number of "liberal arts" (other than "business" and "trade-technical") courses among all colleges. The small colleges offered only two less liberal arts subject fields, on the average, than did the large colleges. In contrast, large colleges offered nearly three times the number of subject fields in trade-technical instruction as did the small colleges. The data thus suggest that the transfer student is probably afforded, in either the small or large Junior College, a sufficient variety of basic "survey" courses as to accomplish his objective of moving to a four-year institution after two years of Junior College work. The terminal student, on the other hand, may find that offerings in certain technical-vocational subjects are limited or unavailable in the small college.

Another characteristic of the small college operation may be that certain supplementary courses in liberal arts subjects designed to "broaden" the general education of the student, are not offered. There is no firm evidence to support this supposition, although the large college did offer 24 course credit hours in each of the liberal arts subject fields (probably more than seven courses in each field) while the small colleges reported an average of 7.9 course credit hours or less than three courses per subject field. Thus, while all colleges offer most, if not all, of the basic liberal arts, it is evident that the small colleges offer fewer courses per subject field than do the large colleges.

Obviously, no inferences may be drawn from this data regarding (1) the quality of what is taught or (2) the number of subject fields or courses that ought to be taught in any Junior College or department within a Junior College. Such judgments are beyond the scope of this analysis. What is demonstrated, however, is the existence, at the large college, of either an ability or combined desire and ability to offer a greater range of courses than is the case in the small college. If this phenomenon took place as a result of higher unit expenditures, the case for scale economies would be ambiguous. But, as shown by the cost data, large colleges offer simultaneously a more extensive curriculum at generally lower cost than do the small colleges. In fact, it was found that during the fall 1963, the number of subject fields offered increased as the cost per student decreased; i.e., a negative correlation (r = -.539). Only if such low cost operations were achieved by inordinately large class sizes (too little sectioning) or unreasonably large faculty teaching loads, etc., could such (operations) be considered as representative of "false economies."

Costs

As noted above, the analysis of scale economies includes both operating and capital considerations. Capital costs are especially important if the major question is whether a district should operate with one or several college campuses.

The costs of master planning, land acquisition, site development, and basic utilities are added when a new campus is initiated and would not be incurred to any appreciable extent if the capacity of an existing campus was expanded. Such expenditures are significant. Land costs currently vary from about $10,000 per acre for rural sites to $100,000 per acre in urban areas. New Junior College campuses, with few exceptions, are being planned to encompass not less than 100 acres. Thus, even the rural Junior College campus generally requires in excess of $1 million in land acquisition costs alone.

There are, in addition, certain physical facilities which would serve for a single campus of, say, 10,000 students but which would, of necessity, be duplicated if the same group of students were split between two campuses. Such buildings as the gymnasium, theatre and auditorium, student center, and the corporation yard are only partially sized as a function of student enrollment and normally exist in some form on a campus regardless of its enrollment.

The amount of space per student in the library facility also appears to be a declining function of student enrollment. The book collection and facility required for its housing do not increase in proportion to the increase in students. This is due primarily to the need for a core collection to serve the basic curriculum regardless of the number of students on hand.

More faculty office area and supporting facilities would be required in the "two, small campus" situation than in the "one, large campus" situation due to, simply, the larger student: faculty ratio in the latter situation as explained below.

Other than the above, most facilities will be sized to accommodate anticipated enrollments and are added at a rate proportionate to the growth rate of enrollment.[1] Unfortunately, no adequate data are available which would permit empirical examination of the relationship between capital costs and size in the Junior Colleges.

The ratio of students to faculty is of major importance in comparisons of Junior College operating costs since faculty salaries constitute more than 55% of total operating outlays and since determination of the supporting clerical, technical, and administrative staff is based in large part upon the number of faculty. A large "ratio" is usually associated with a low cost (per student) program while a small ratio results in high costs per student. The"ratio" itself is a function of the type and extent of course work undertaken by the student, average class size, and the units of work expected of faculty in classroom teaching as follows:

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[1] As a general rule in the four-year segments, larger campuses operate with less capacity relative to enrollment than do the small campuses. This phenomenon appears to be related more to the factor of building lead times than to any inherent scale economies in facilities utilization, however.

$$S/T = f\ (s,c,w)$$

where, S = total number of students
T = total number of faculty
s = units of course work taken per student
c = average class size
w = units of course work taught per faculty; and

$f_s < 0$, $f_c > 0$, and $f_w > 0$. The student:faculty ratio varies (1) inversely with the amount of course work taken by each student and (2) directly with the average class size and faculty classroom teaching load.

The number of course units taken per student is generally similar in all colleges and invariant with respect to college size. Faculty teaching workload is normally a policy determination of the local college governing board and would not appear to be related, in any logical way, to college size. Recent research indicates that faculty workload policies are generally comparable among all Junior College districts (see Council study #67-15, Appendix B). The third variable, average class size, is largely a function of (1) the total number of students enrolled, (2) course and sectioning policies, (3) the type and method of instruction (i.e., graduate labs and seminars generally contain fewer students than do lower division lectures), and in some instances the physical sizes of lecture rooms and laboratories. Assuming that generally similar course and sectioning policies and instructional methods exist among the Junior Colleges, the crucial relationship is that between average class size and the total number of students enrolled. Empirical evidence for California Junior Colleges during the fall 1963 indicates that this relationship is positive and significant. For a sample of 71 colleges, mean class size and total college size demonstrated a relatively high, positive correlation ($r = .654$).[1] Notably, this relationship occurs even though the number of courses per subject field is much larger in large, as opposed to small, colleges (a factor which tends to reduce average class size). If this relationship holds true generally, larger colleges should be characterized by high student:faculty ratios (S/T) and exhibit low costs per student.

In addition to direct teaching costs, there are certain, essentially indivisible, functions of general administration, library, student services, and plant maintenance that do not increase proportionately with enrollment increases. For example, a college normally employs only one president, one head librarian, one dean of students, etc., regardless of the size of the student enrollment. Numerous other activities in these areas are related only partially to enrollment. Such relationships are amply demonstrated by 1966-67 expenditure data for California Junior College districts. Cost per student for general administration correlated negatively and significantly ($r = -.517$) with college size. The cost per student for plant maintenance and operation demonstrated a similar correlation with college size ($r = -.469$).

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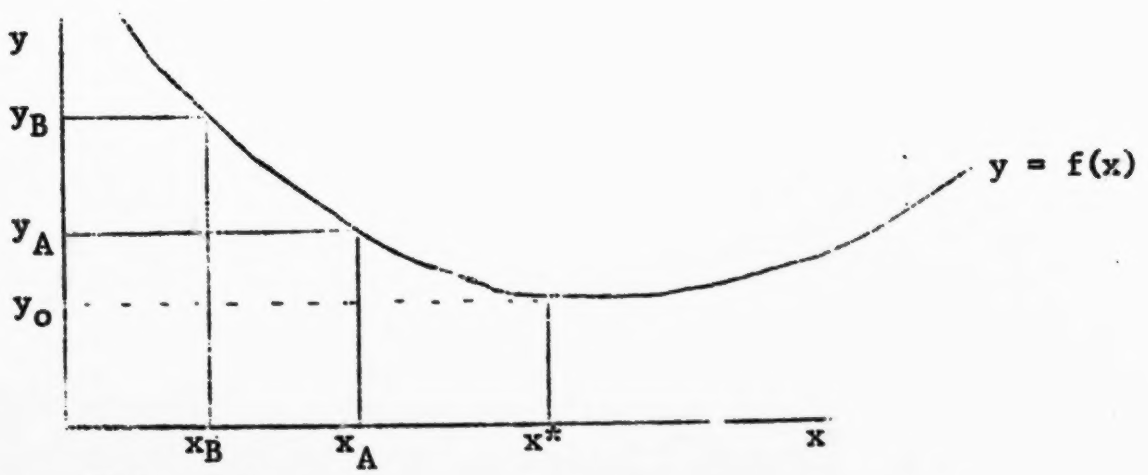
[1] Unless otherwise indicated, the following analyses are based upon data derived from reports issued by the California State Department of Education.

Thus, it is expected that, other things being equal,[1] total operating costs per student will decrease as size increases, though not necessarily without limit. This relationship of cost and size is shown graphically in Figure D-1 where y (unit cost) is a negative function of x (college size) between $x=0$ and $x=x^*$. The larger institution (A) is less expensive per student than the smaller institution (B).

Figure D-1

THEORETICAL RELATIONSHIP OF SIZE AND COST IN JUNIOR COLLEGE OPERATION



y = Unit cost.

x = Size of institution.

There may be a size, x^*, where average costs reach a minimum. Beyond this size, additional sections of numerous courses must be added as initial sections become too large and certain administrative and supporting units must be duplicated to maintain appropriate control over the operations. The function $f(x)$ may, therefore, be positive for $x > x^*$. Note, however, that the following analysis of cost and size relationships indicated that none of the existing California Junior Colleges are operating in the size range of increasing dis-economies ($x > x^*$). The largest college examined enrolled nearly 12,000 in average daily attendance (ADA) during 1966-67. The results of the analysis are such as to indicate that there are increasing economies of scale over the range of from zero to 12,000 ADA and that, while the size of minimum average cost (x^*) is not determined, it would appear to be at a point greater than 12,000 ADA. The distribution of district costs suggests that the size-cost relationship is most pronounced over the range from zero to approximately 5,000-6,000 students. This finding is consistent with the shape of the theoretical cost function in Figure D-1.

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[1] It should be again emphasized that a rather important variable, the quality of instruction that is carried on, is assumed constant throughout this analysis.

Empirical examination of the economies-of-scale proposition is difficult since "other things" are seldom, if ever, equal in practice. The breadth of curriculum factor has already been noted. If, for example, the larger Junior Colleges pay higher salaries and demand fewer classroom teaching hours of their faculty than do the smaller colleges, the cost data are distorted even further. Another variable, district financial ability (as measured in assessed valuation per student), is known to be positively correlated with unit costs ($r = .786$ for 1963-64 and $r = .670$ for 1966-67). As noted elsewhere in this paper, district organization has significant implications for expenditures for certain functions. These factors, and others that may be present but unaccounted for, will tend to distort any scale-economies that would otherwise be demonstrated, especially if such factors are significantly related to college size.

Examination of the data for California Junior College size and unit expenditure relationships during 1963-64 reveals a distribution that is generally curvilinear. A function of the following form is therefore employed:

$$Y = b\ X^m$$

or taking logarithms:

$$\log Y = \log b + m \log X$$

where,

Y = district expenditures per unit of average daily attendance,

X = the average college size in each district, and

where b and m are constants.

The constants are computed by the method of least squares using data for 48 separate Junior College districts. The result is

$$\log Y = \underset{(0.0574)}{3.3746} - \underset{(.0224)^*}{.1769} \log X, \qquad r^2 = .572$$

(The standard errors of estimate are shown in parentheses.) Thus, even in the face of the disturbing factors mentioned above, significant scale economies in operating costs are evident for 1963-64.[1]

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[1] To confirm the superiority of the logarithmic function over one composed of natural numbers, a regression using the form $Y = b + mX$ was applied to the same data with the following results:

$$Y = \underset{(131.8088)}{710.9513} - \underset{(0.0081)}{0.0280}\ X, \qquad r^2 = .205$$

*Significantly less than zero using $t_{.005}$ in a one-tailed test.

The 1963-64 data may be further analyzed in an attempt to correct for some of the influence of curriculum breadth variations. This correction consists of removing from the sample those colleges that reported offering extreme numbers (either high or low) of subject fields.[1] The regression analysis for the remaining colleges (34 in number) that demonstrate the "more homogenous" curricula yields the following results:

$$\log Y = \underset{(0.0331)}{3.6568} - \underset{(.0241)^{*}}{.2652} \log X \qquad r^2 = .789$$

The correction results in a substantially better "fit" of the data as well as a greater "elasticity" of unit cost with respect to college size.[2]

As noted, expenditures and financial ability are highly positively correlated. At the same time, financial ability and size appear to correlate negatively ($r = -.441$ during 1963-64 and $r = -.264$ during 1966-67). Thus, some of the cost variation attributed to size may be due in part to the financial ability of the district.

This finding would tend to reduce the impact of the economies-of-scale proposition in that one may argue it is primarily district financial ability, rather than size, that determines the level of expenditure per student. However, the higher expenditure of the smaller district results, as shown above, in a less extensive program. Expenditure and tax effort correlate positively ($r=.192$ during 1966-67) while size and tax effort ($r=-.001$ and ability and effort ($r=-.043$) correlate negatively. None of these relationships, however, are significant.

The mechanism of causation, therefore, appears to be that in an effort to offer a comprehensive or acceptable program, the smaller district is required to expend greater sums per student due primarily to the size factor. The high expenditure is accomplished primarily by relatively greater financial ability since tax effort appears to be unrelated to both college size and unit expenditure. For the small college to offer programs comparable to those of the larger colleges would require either greater tax effort or financial ability or both.

While the above conclusion appears to be consistent with the data presented herein, a more rigorous test of the economies-of-scale proposition employs a function that would include all the variables possibly relevant in relation to college expenditure variation. The analysis in Appendix D does just that. Here, eight independent variables specifying both program and financial characteristics of colleges (including financial ability and curriculum breadth) were run against expenditures per student. The multiple regression was accomplished by means of logarithms and resulted in a significant degree of "explanation" ($R^2 = .663$). Of the independent variables, average college size and average faculty salary were significantly related to unit expenditures. The net regression coefficient for the size variable was -.0929 while the related beta coefficient was -.460. Elimination of the financial variables results in an even more significant relationship between cost and size (net regression coefficient = -.1450 and beta coefficient = -.740).

---

[1] The "extreme" cases were identified as those colleges whose number of subject fields fell more than one standard deviation from the system-wide mean number of subject fields per college.

[2] Size elasticity is the percentage change in unit cost related to the percentage change in college size and is measured by m. $^{m}\text{II} = -.2652$, for the corrected data, indicates greater decreases in cost due to size increases than does $^{m}\text{I} = -.1769$ for the uncorrected data.

*Significantly less than zero using $t_{.005}$ in a one-tailed test.

Another way of looking at the 1963-64 size-cost distribution is to define "high and low" cost colleges as being those with higher or lower costs, respectively, than the median cost college and "large and small" colleges as being larger or smaller than the median size college. The numbers of colleges in each category are then,

Type	Number	Percentage
Small, high cost colleges	16	33%
Small, low cost colleges	8	17
Large, high cost colleges	9	19
Large, low cost colleges	15	31
	48	100%

As expected from the regression values, nearly two-thirds of the colleges fall into the small-high and large-low cost categories.

A similar analysis of 1966-67 data for 58 California Junior College districts resulted in the following:

$$\log Y = \underset{(0.0648)}{3.1153} - \underset{(.0251)^*}{.0771} \log X, \qquad r^2 = .142$$

and by type,

Type	Number	Percentage
Small, high cost colleges	18	31%
Small, low cost colleges	11	19
Large, high cost colleges	10	17
Large, low cost colleges	19	33
	58	100%

---

*Significantly less than zero using $t_{.005}$ in a one-tailed test.

While the regression coefficients are significant (at the 1% level) and carry the appropriate sign, the unit cost reported in 1966-67 appears to be less "size-elastic" (m = -.0771) than was the case three years earlier.

Another empirical examination of the scale-economies proposition was performed upon 1965-66 data for public two-year colleges in 37 states.[1] For this analysis, the unit cost was the reported expenditure per unit of total enrollment for all public two-year institutions in a state and the size variable was the mean campus size for all public two-year colleges in that same state. The results of this analysis are strikingly similar to the results for the two sets of California data:

$$\log Y = \underset{(0.1637)}{3.4854} - \underset{(.0758)^*}{.2090} \log X, \qquad r^2 = .179$$

and by type:

Type	Number	Percentage
Small, high cost	11	31%
Small, low cost	7	19
Large, high cost	7	19
Large low cost	11	31
	36	100%

---

[1] For description of the nature and origin of this data, see CCHE Study No. 68-11, Study of Income for Public Higher Education, May, 1968.

*Significantly less than zero using $t_{.005}$ in a one-tailed test.

APPENDIX E

TIME SERIES ANALYSIS OF JUNIOR COLLEGE EXPENDITURES AND INCOME

The following analysis covers Junior College expenditure data for the 16-year period, 1951-52 to 1966-67.[1] Also examined are data for income sources and tax elections during more recent periods.

Expenditures

The three regression equations below are the results of fitting time series data for expenditures per student in separate Junior College districts over the period 1951-52 through 1966-67 (16 years).

(1) $\log Y = a + bt$

$$\log Y = \underset{(0.0178)}{2.6010} + \underset{(0.0010)}{0.0154}\, t \qquad r^2 = .948$$

(2) $Y = at^b$ or $\log Y = \log a + b \log t$

$$\log Y = \underset{(0.0312)}{2.5807} + \underset{(0.0209)}{0.1797} \log t \qquad r^2 = .841$$

(3) $Y = a + bt$

$$Y = \underset{(503.2060)}{257.6397} + \underset{(27.2903)}{31.2897}\, t \qquad r^2 = .468$$

The semi-logarithmic fit (1) appears to be superior both in its correlation (r^2) and standard errors of estimate (in parentheses), although the exponential function (2) is only slightly less preferable.

The semi-log fit results in an annual growth rate for total current expenditures per student of 3.62% (see Figure E-1). Prices increased at an annual rate of 4.57% during the same period. (A price index for Junior Colleges constructed for this study was based upon annual increases in average salaries for both certificated and non-certificated employees along with increases in the prices of equipment and services. Each component is weighted according to the proportion of the total budget it constitutes.) The following growth rates are thus estimated for the Junior College system during the period examined:

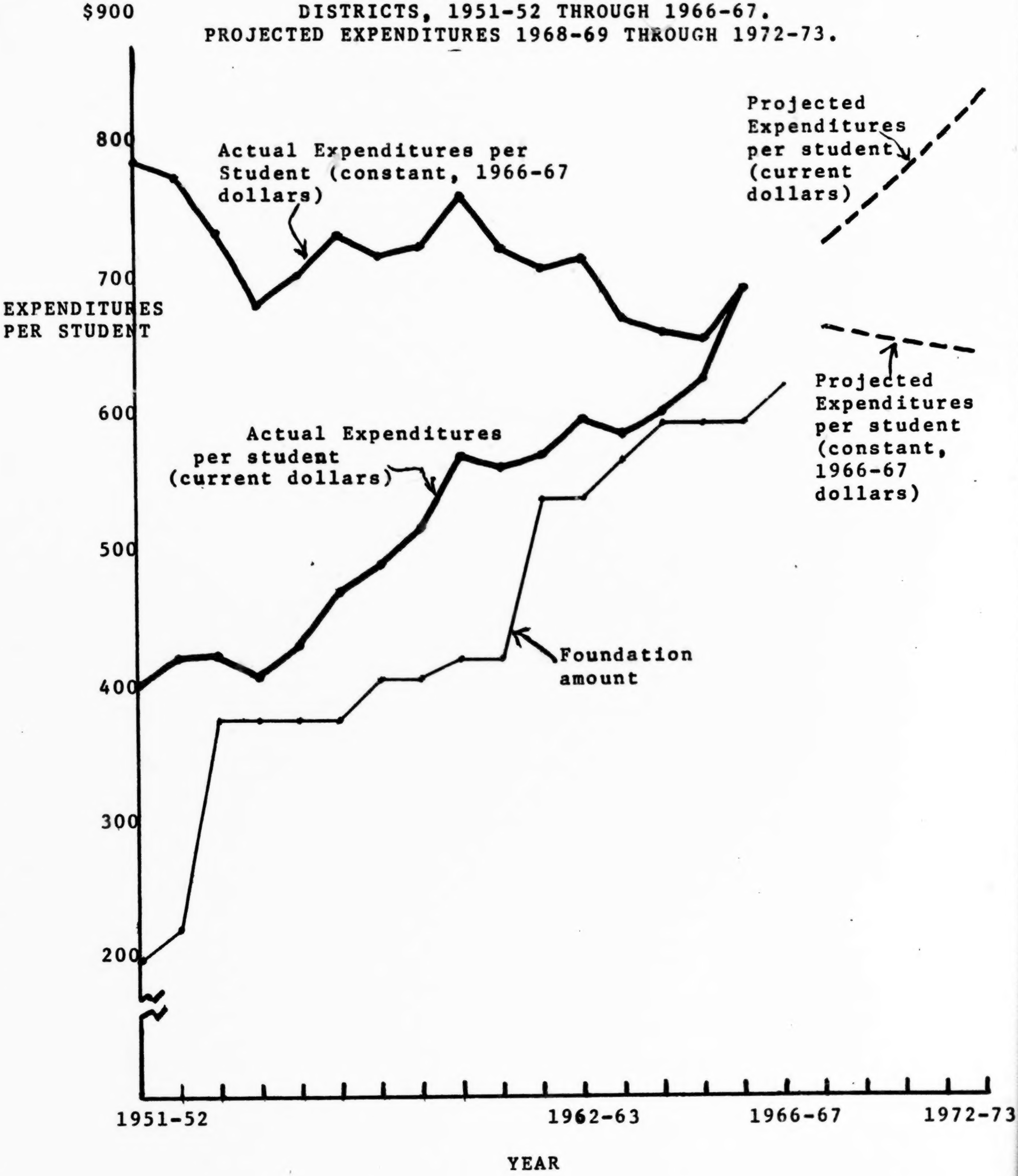
	Annual Growth Rate
Actual current expenditures per student	3.62%
Price component	4.57
Constant expenditure component	-0.95

---

[1] Data are derived from reports issued by the California State Department of Education.

Figure E-1

EXPENDITURES PER STUDENT
SEPARATE JUNIOR COLLEGE
DISTRICTS, 1951-52 THROUGH 1966-67.
PROJECTED EXPENDITURES 1968-69 THROUGH 1972-73.



During the period, the systemwide student:faculty ratio increased from 29.7 to 37.5. Some of this increase may be due to the increase in average size of district (from 2,772 to 5,064); i.e., with increased college, and class sizes, there is a tendency toward lower expenditures per student (see Appendix D). However, some of the trend in the important student: faculty ratio may be due also to increases in faculty workload.

A negative relationship of year to year changes in constant expenditures and the student:faculty ratio (r = -.512) may be the result of either or both of two possible causes: (1) a lack of funds may prevent the hiring of faculty and, given the usual enrollment increase, costs per student fall and the ratio naturally rises; or (2) there may be an increase in ratio resulting from a budgeted underestimate of the actual student enrollment. In practice, both effects may operate simultaneously.

The trend suggests that there may have been little program augmentation in the system during the period, except perhaps at the expense of existing programs. The decline in constant per student expenditures does not necessarily, however, indicate a decline in the quality of instruction. It may simply mean an increase in efficiency.

The lag on the part of the foundation amount (behind actual expenditures) is also pictured in Figure E-1. At various times this lag has exceeded $100 per student.

The several Junior College growth rates may be contrasted with those exhibited by the California State Colleges during the same period. The comparable growth rates for the latter system are as follows:

	Annual Growth Rate
Actual current expenditures per student	5.55%
Price component	4.58
Constant expenditure component	0.97

Price increases are an explicit consideration in the development of the annual systemwide State College budget. While these data are not conclusive, they do suggest the need for some mechanism of explicit price consideration in the budget process of the Junior Colleges.

To test the importance of other factors in relation to the annual change in expenditures per student, a multiple regression analysis was performed on the first differences $(Y_{(t)} - Y_{(t-1)})$, $(X_{1(t)} - X_{1(t-1)})$, . . . of several variables measuring financial and program characteristics of the system. The following results were obtained for the same 16-year period:

Table E-1

TIME SERIES ANALYSIS OF VARIABLES RELATED TO JUNIOR COLLEGE UNIT EXPENDITURES 1951-52 - 1966-67

	Variable	Regression Coefficient	Beta Coefficient
Y	Expenditures per student	14.751 (constant)	
X_1	Average district size	.085	.822
X_2	Assessed valuation per student	.003	.715
X_3	Average local tax rate	345.611	.293
X_4	Foundation amount	.031	.063
X_5	Computational tax	-146.099	-.214
X_6	Foundation program structure	-4.560	-.082
X_7	Price index	-2.479	-.090
X_8	Adults/total enrollment	891.616	.317
X_9	State share	-400.038	-.449
	Standard Error of Estimate:	13.008	
	Coefficient of Determination:	.655	

Local financial ability, measured in terms of assessed valuation per student (AV/ADA), is the most prominent of the financial variables. It is significantly and positively related to unit expenditure changes. Year to year changes in unit expenditure are positively related to changes in the average college size. Other variables are not significant, although decreases in the state "share" of total expenditures are associated with increases in the dependent expenditure variable.

Trends in the costs of education by major function are shown in Table E-2 for the period 1962 through 1967. The recent annual rate of increase in expenditures for the entire system is greater than that rate which was characteristic of separate districts over the longer period examined in Figure E-1. Most of the recent acceleration in unit expenditure increase is attributable to the large increase for 1966-67 over the previous year. The most rapid increase in expenditure relative to students is in the

Table E-2

EXPENDITURES PER STUDENT, JUNIOR COLLEGE SYSTEM 1962-63 through 1966-67

	Graded Instruction	Non-graded Instruction	Total Instruction	Public (Community) Services	Total Cost of Education
1962-63	$ 591	$ 407	$ 582	$ 7	$ 589
1963-64	581	422	574	10	584
1964-65	602	448	597	13	610
1965-66	625	478	617	24	643
1966-67	697	490	685	23	708
(Average annual percentage increase)	4.40%	4.75%	4.33%	38.32%	4.78%

category of community services. A per-student expenditure for community services is not entirely meaningful, however. The cost of non-graded instruction is increasing more rapidly than the cost for graded instruction. Non-graded expenditures per student are still reported to be significantly less than those reported for graded instruction, however.

Based upon the recent five-year rate of increase, systemwide Junior College expenditures per student for educational and general purposes (including public services) during 1968-69 can be estimated at $777. For 1969-70 the similar expenditure measure would increase to $814 (in current, 1969-70, dollars).

Sources of Income

Recent trends in the several sources of Junior College income are shown in Table E-3 below. While the overall state share has increased since 1962, much of this trend is due to specific aid, rather than the general aid provided through the foundation program. The local share has decreased from 72% to 64% during the four recent years. At the same time, federal support increased, and constituted nearly 5 percent of total college income by 1966-67.

Table E-3

DISTRIBUTION OF TOTAL INCOME
FOR CALIFORNIA JUNIOR COLLEGES

	Federal	State	Local	Student	Total Income
		(percentages)			(millions of dollars)
1962-63	2.36%	24.39%	72.96%	0.29%	$ 148
1963-64	2.45	24.94	72.30	0.31	172
1964-65	2.50	29.10	67.26	1.14	196
1965-66	3.58	31.80	63.63	0.99	244
1966-67	4.79	30.12	64.14	0.95	273

Local financial ability (AV/ADA) appears to have been the most significant of those variables which interact to determine the state share of Junior College expenditures. Besides AV/ADA, variables describing the first differences in (1) the foundation amount, (2) computational tax, and (3) ratio of adults to total enrollment were included in a multiple regression, again covering the same period 1951-52 through 1966-67. The following results were obtained:

Table E-4

TIME SERIES ANALYSIS OF VARIABLES RELATED TO THE STATE SHARE OF COSTS, SEPARATE JUNIOR COLLEGE DISTRICTS 1951-52 - 1966-67

	Variables	Regression Coefficient	Beta Coefficient
Y	State share	.007606	(constant)
X_1	Assessed valuation per student	-.000003	-.601
X_2	Foundation amount	.000089	.162
X_3	Computational tax	.052572	.068
X_4	Adults/total enrollment	.619762	.196
	Standard Error of Estimate:	.01827	
	Coefficient of Determination:	.461	

The overall fit obtained is not significant. However, the dominant role of local ability is clearly shown by the high negative beta coefficient. The other main components of the foundation program calculation demonstrate little apparent relationship to annual changes in the state share.

Changes in assessed valuation per student depend, obviously, upon the rate of growth in student attendance as compared to the growth rate in assessed valuation. This comparison is shown in Table E-5 below. Note that with no change in the foundation program, the state share increased from 1964-65 to 1965-66 as the rate of growth in students exceeded the rate of growth in assessments. In the following year assessments grew at a faster rate than students and the state share declined, again with no change in the foundation program.

Table E-5

GROWTH RATES IN STUDENT ATTENDANCE AND ASSESSED VALUATION JUNIOR COLLEGE DISTRICTS

	Percent Increase Over Prior Year	
ACTUAL:	ADA	District Assessed Valuation
1958-59	8.5%	10.8%
1959-60	1.2	10.5
1960-61	9.7	10.8
1961-62	10.5	11.4
1962-63	6.2	10.9
1963-64	14.4	10.9
1964-65	12.9	11.3
1965-66	15.7	10.9
1966-67	6.4	9.5
1967-68	10.4	9.9
10-Year Average	9.6%	10.7%

	Percent Increase Over Prior Year	
ESTIMATED:[1]	ADA	District Assessed Valuation
1968-69	11.0%	
1969-70	9.0	
1970-71	9.0	
1971-72	7.5	
1972-73	6.7	
1973-74	4.3	
1974-75	5.4	
1975-76	5.3	

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[1] Estimated from data supplied by the California State Department of Finance.

The foundation amount was raised from $600 to $628 beginning 1967-68. As a consequence, the state share probably increased although no data are yet available to confirm this. Given the generally constant rate of growth in assessments and the estimates of student increase shown in Table E-5, it is likely that the amount of state aid per student would remain relatively constant through 1970-71 if there were no change in the foundation program. The state share, however, would decline due to annual increases in total expenditures per student.

An estimated expenditure per student of $814 along with an estimated student enrollment of 456,870 would result in a total educational and general expenditure of $372 million for the entire Junior College segment during 1969-70. Table E-6 indicates the alternative costs for the state General Fund which would result from alternative state sharing policies. It is estimated that with no change in the existing foundation program, the state share will approximate 32% in 1969-70.

Table E-6

RESULTS FROM ALTERNATIVE STATE SHARING POLICIES
1969-70

	Expenditure (millions of dollars)
Total Expenditure	$ 372
State Share	
32%	$ 119
45	167
50	186
60	223
70	279
80	298
90	335

Local Tax Rates

The average local tax levy (in separate districts) declined from $.387 (per $100 of assessed valuation) in 1951-52 to $.323 in 1955-56 but has since steadily increased, until, 1966-67, the levy stood at $.490. Total district assessed valuations have increased at an annual rate of over 10 percent during the past 10 years. The result of such trends are significant increases in property tax bills.

As shown in the following table, districts currently levy rates either at or in excess of the statutory maximum of 35¢ for general operating purposes. The means for a general operating rate above the maximum is a voted tax override. In addition, of course, there are permissive tax overrides established by local board action for specific purposes such as community services, employees retirement, etc., and taxes for the principal and interest payments on bonds authorized by the electorate.

Table E-7

TAX RATE FOR SEPARATE DISTRICTS

	Number of Districts Below maximum	At maximum	Above maximum
1965-66	2	43	12
1966-67	0	46	13
1967-68	0	44	16
1968-69	0	41	19

Tax override elections, requiring only a majority, rather than 2/3 vote for passage, have been less successful recently than in the past. During 1966-67 and 1967-68, 11 of 19 such elections were successful. All four override elections held during the three years previous to 1966-67 were successful.

The rate of success for Junior College bond elections has been declining significantly during recent years. The earliest of the three periods examined in Table E-8, was characterized by the highest success ratio, 76% of the proposals being successful. This ratio declined to 62% in the following four-year period (1960 to 1964) and in the most recent period examined, less than one-half of all issues were successful. In fact, during the recent three years only nine of twenty-five proposals passed.

Table E-8

JUNIOR COLLEGE BOND ELECTIONS, 1954-55 TO 1967-68

	1954-55 to 1959-60	1960-61 to 1963-64	1964-65 to 1967-68	1954-55 to 1967-68
Proposed				
Amount	$ 94,219,000	$ 282,760,000	$ 541,576,000	$ 918,555,000
Accepted				
Amount	$ 63,229,000	$ 180,285,000	$ 177,312,000	$ 420,826,000
% of proposed	67.1%	63.8%	32.7%	45.8%
Rejected				
Amount	$ 30,990,000	$ 102,475,000	$ 364,264,000	$ 497,729,000
% of proposed	32.9%	36.2%	67.3%	54.2%
Proposed				
Number	21	40	35	96
Accepted				
Number	16	25	17	58
% of proposed	76.2%	62.5%	48.6%	60.4%
Rejected				
Number	5	15	18	38
% of proposed	23.8%	37.5%	51.4%	39.6%

APPENDIX F

EXISTING COUNCIL POLICY ON STUDENT FEES
(University and State Colleges)

WHEREAS, University and State College practices with respect to student fees are not completely in compliance with Master Plan provisions; and

WHEREAS, Certain definitions in the Master Plan regarding student fees are ambiguous; and

WHEREAS, The Director of the Council, with the cooperation of the State Colleges and University, has reviewed the subject of fees for student services and developed a common definition of student fees and a list of those activities for which such fees might be appropriately levied; and

WHEREAS, The Coordinating Council for Higher Education finds that a common definition of student fees and identification of those activities which may be appropriately supported from such fees are needed to assist the determination of state and student responsibilities for the financing of higher education and to assure that such fees are adequate to cover the cost of non-instructional services to students without cost to the taxpayer; now, therefore, be it

RESOLVED, That the Coordinating Council for Higher Education advises the University and State Colleges to adopt the following definition of student fees:

> Student fees are defined as charges to students to cover the cost of non-instructional services and programs that are designed to maintain student well-being;

and be it further

RESOLVED, That the Coordinating Council for Higher Education advises the University and State Colleges to consider for adoption the list of activities[1] for which such student fees may be appropriately levied as contained on page 6 of the agenda item on Student Fees presented to the Council Committee on Finance, October 7, 1968; and be it further

RESOLVED, That the State Colleges and University report to the Council at its July meeting regarding their progress in identifying and allocating costs for those activities to be supported from student fees as defined by the Council.

Adopted by Resolution
October 8, 1968

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[1] See list on page 2 of this Appendix.

FUNDING SOURCES FOR SPECIFIC ACTIVITIES UNDER THE PROPOSED STUDENT FEE DEFINITION

Activity[1]	Student Fees[2]	Other Sources[3]
STUDENT SERVICES		
Educational Placement	X	
Student and Alumni Placement	X	
Housing Service	X	
Health Service	X	
Recreation	X	
Cultural Programs	X	X
Counseling and Testing	X	X
Student Activities	X	X
Dean of Students	X	X
Foreign Students Program	X	X
Public Ceremonies	X	X
Admissions Office		X
Registrar		X
Student Statistics		X
STUDENT AID		
Financial Assistance Grants, Fellowships, etc.	(unresolved)	
Financial Assistance Administration		
AUXILIARY ENTERPRISES		
Dining	(unresolved)	
Residence Program	X	
Parking	X	
Intercollegiate Athletics	X	
Student Union, Bookstore	X	
INSTRUCTION		
Academic Advising		X
Laboratory Cost		X
Instructional Expense		X

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[1] Detailed descriptions of these activities are contained in Council Study #68-5.

[2] May be either general or specific student fees. In some instances user fees are charged to non-students for concerts, plays, intercollegiate athletic events, etc., and may be used in conjunction with student fees to provide the financial support required.

[3] The "other sources" include state and/or local governmental support and student tuition or other student charges for instructional purposes. Note that any activity may employ revenue from gifts, grants, and endowments and federal funds to supplement either student fees or revenues from "other sources."

APPENDIX G

ANALYSIS OF ELIGIBILITY ATTAINMENT AND THE COLLEGE-GOING DECISION

Summary

The following examines a sample of California high school seniors, surveyed during the spring of 1967, with regard to those factors which may influence a student's high school performance; i.e., the process during which he becomes eligible to attend a particular type of higher education institution in California. Also examined are those factors which are important in the decision of a student to continue his education beyond high school, the type of institution preferred if he does continue, and the extent of work that may be undertaken during college attendance. Hopefully, this type of analysis may provide some insight into possible policy measures relevant to student financial aid programs or similar efforts designed particularly for the student who is socio-economically disadvantaged. In keeping with the topic of this review, the emphasis is upon the potential Junior College student.

To carry out this analysis, four multiple regression analyses were performed, the dependent variable for each regression representing a particular question as follows:

1. Who becomes eligible to attend a four-year public (as opposed to two-year public) institution of higher education in California.

2. The decision to enroll at a four-year institution as opposed to two-year institution (by the individual who is eligible to attend either).

3. The enrollment decision by the individual who is only eligible to attend a Junior College.

4. Plans for work by the individual during attendance.

Each regression examines a number of independent variables which are often thought to be importantly related to the above dependent variables. The independent variables generally describe the socio-economic characteristics of both the potential student and his family. The specifications for all equations and variables are contained in Part V of this Appendix.

The individuals examined are those high school seniors who participated in a survey undertaken by the Coordinating Council in cooperation with the University and State Colleges during the spring of 1967. A partial analysis of the data and findings that resulted from this survey were presented in the Council's 1967 report on financial aid programs (#67-13). A description of the survey methodology and nature of the response is contained in Part VI of this Appendix. Copies of the survey instrument are available upon request from the Council offices in Sacramento.

Generally, the findings below are consistent with other recent research into the differences among students attending four-year institutions, those attending two-year institutions, and the non-attenders. Part VII contains the results of the American Council on Education (ACE) survey of fall 1967 freshmen in California institutions and provides a basis for comparing characteristics of those actually enrolled with those of the Council sample who indicated they would enroll.

The rather specific definitions of requirements for admission to the four-year public segments of higher education in California suggest the importance of knowledge of the factors relevant in determining eligibility. The act of becoming a "four-year eligible" (i.e., high school scholastic achievement) obviously dictates the type of institution the student may attend and also appears to influence the decision regarding his continuing education beyond high school in any institution. Expressed college-going intentions among the individuals sampled appear highly related to scholastic ability:

	Will continue education beyond high school	Will not continue education beyond high school
University eligibles	92%	8%
State College (but not University) eligibles	74%	26%
Junior College (only) eligibles	58%	42%

(Note: The college-going rates and other decisions or preferences analyzed are those expressed by the high school seniors in response to questions regarding what they would do the following fall or following year. There has been no follow-up of these individuals to determine the relative incidence of individuals actually doing what they earlier thought and/or stated they would do.)

In contrast to those students estimated to be "four-year eligibles" (hereafter denoted by FYE) on the basis of their high school performance, the individual eligible only to attend a Junior College (hereafter denoted by JCE) is found in Part I below to characteristically possess a significantly less professionally-oriented occupational expectation.[1] In addition, the JCE (in contrast to the FYE) is more often of minority background and comes less often from a family where both parents are present. Both father and mother (when employed) of JCE report occupations which more often tend toward the semi-professional or unskilled type of work than do the occupations of parents of FYE. The father of the JCE reports a significantly less extensive amount of education than does the FYE father. All of the above factors appear significantly related to high school performance whereas other variables describing family income, family size, and mother's educational level are not significant in this regard except insofar as they may correlate positively with the significant independent variables.

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[1] The criterion for "significance" throughout this analysis is the 5% level of statistical significance.

For those individuals who are eligible to attend any institution (i.e., the FYE) the choice of enrollment at a four-year versus two-year institution is related primarily to the preferred residence, professional orientation of the student's expected occupation, and to the educational level attained by the father. Students from the FYE group choosing to attend a Junior College, plan to live at home and intend to follow an occupation that is semi-professional or unskilled more often than do their counterparts enrolling directly at the four-year institution. The father of the Junior College-bound FYE generally reports a lower level of educational attainment. These findings are consistent with those resulting from the ACE survey of fall 1967 freshmen enrolled in California Junior Colleges (see Part VII).

The enrollment choice by the JCE appears to depend in part upon the professional orientation of the student's expected occupation. This is similar to the result for the FYE. In contrast to the FYE, however, is the relationship of the JCE enrollment choice to the number of dependents to be supported from the family income. While family income itself is not found to be significant, the level of family income per dependent appears to be a significant determinants of the college-going choice by the JCE. This suggests the importance of the income that less wealthy families may forego if one or more of the children are to attend college. Thus, while the cost of instruction and related services in the typical California Junior College is either nominal or free to the student, the real "cost of attendance" to that same individual and his family may be considerable. For the generally more wealthy FYE, the decision not to continue education relates primarily to occupational expectations, and not to any significant degree upon reported family financial ability.

The final question considers the factors that may motivate work on the part of the student planning enrollment. The results indicate rather significant relationships between plans to work on a full or part-time basis while in attendance, plans to live at home, a low level of family income per dependent, and relatively low parent and family contributions to the student's educational costs. The suggestion here that the Junior College student will work more and depend to a much greater extent upon such earnings to support his education than will his counterpart attending a four-year institution is confirmed by the ACE results. In the ACE analysis, 47 percent of Junior College freshmen in California indicated work or personal savings were the major source of their financial support while less than one-fourth of the students at four-year institutions indicated similar sources to be their major support. Finally, the student planning work is less often willing to borrow to finance his education than the student who does not plan to work while enrolled.

To summarize, high school scholastic performance and the determination, in California, of the higher education institution an individual may attend appears to have depended, for the high school seniors examined, largely upon the student's motivation and upon racial background and other family characteristics such as parent's education and occupational levels, but not directly upon family financial ability. Once eligibility is determined, however, the college-going decision by the JCE is related to the financial capabilities of the family and career motivation, but less so upon the other family characteristics. The college-going choice by the FYE, in contrast, is less related to family finances and more related to motivation and other family characteristics. The extent of work planned by students during attendance, particularly by those enrolling at a Junior College seems to be highly dependent upon the family's financial capability. These results suggest that lack of finances, therefore, do preclude a number of students from enrolling at Junior Colleges and, further, that financial factors must certainly slow progress toward completion of education and perhaps lower persistence rates for individuals who do enroll in Junior Colleges. From these and the other research findings noted, the need for financial assistance to students in the "cost free, open-door" Junior Colleges in California appears to be evident.

A word of caution is in order. In analyses of this type, there is a significant degree of multicolinearity among the independent variables due to their very nature. In view of the relative consistency of the results, however, it seems doubtful that such relationships among the independent variables would have significant impact upon our conclusions.

The details of each analysis follow in Parts I, II, III, IV.

I. Attainment of Eligibility for Admission to a Four-year, as Opposed to Two-year, Institution

This analysis includes some 5,647 (69%) of the 8,162 individuals surveyed in the entire high school senior sample. Among the 5,647 here analyzed, 39 percent are eligible to attend a four-year institution while among the entire sample 36 percent were similarly eligible. The average family income of the group examined here is nearly $2,000 higher than that reported for the entire sample of 8,162 cases. The incidence of Caucasians in this group is .83 as compared to .80 for the total sample. Possible bias resulting from these differences would not appear to be sufficiently large as to distort the findings of this analysis.

The dependent variable (Y_1) is specified as the attainment of eligibility to attend either or both four-year public institutions (as compared to becoming eligible only for Junior College enrollment) in California. Eligibility was determined from review of the high school transcripts for those individuals who responded to the survey. Thus. the elements of entrance examination and subjectivity are excluded. The dependent variable, therefore, may be more appropriately termed as an index of high school grade performance. Exclusion of the subjective and examination criteria does have an impact upon the nature of the sample as indicated below.

The coefficient of determination for the regression equation ($R^2 = .150$) and F ratio of 82.54 are both statistically significant. (See Table G-1.)

Further, eight of the twelve independent variables examined are significantly related to the dependent variable. The expected student occupation is the most significant of the independent variables. The direction of statistical causation in this instance would seem to be evident although a good high school performance may in some cases result in, rather than result from, a high career expectation. The significant coefficient for sex of student is due to the method of eligibility determination (i.e., by grades only) which results in a preponderance of females being determined as four-year eligibles in contrast with the number of those who actually attain such status when grades are combined with entrance examinations (see description of survey sample in Part VI).

The significant coefficient for the variable specifying "the number of students to be supported in college" is most likely the result of the attainment of eligibility and subsequent attendance plan and not the reverse. While the number of brothers and sisters attending college may influence high school performance, it would not seem to hold the significance attributed to it by the regression results. Thus, while this relationship is significant, the direction of causation appears to be such that the equation explains variation in the independent, rather than dependent variable.

Other variables describing father's education, father's occupation, number of parents, and mother's occupation are all positively and significantly related to the dependent performance variable. Notably, in contrast with results of the analyses of attendance and work decisions, race is significant and positively related to high school performance. This result is consistent with findings elsewhere which indicate that the drop-out rate during high school is far greater among minority groups than among Caucasians.[1]

The variable specifying family size is not significantly related to high school performance. This contrasts with results obtained for family size with respect to attendance and work decisions. In addition, it may be noted that family income correlates positively and significantly with all of the independent variables but is not itself significantly related to high school performance. The family of the four-year eligible (high achiever) is on the average more wealthy than that of the two-year eligible but this seems to be due to the relationship of income to other variables that are themselves highly related to scholastic performance.

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[1] See California Legislature, Joint Committee on Higher Education, Increasing Opportunities for Disadvantaged Students, by Kenneth A. Martyn (Sacramento, December 1967) p. 12; see also California State Department of Education, Distribution of Racial and Ethnic Groups in California Public Schools (Sacramento, November 1968).

Table G-1

REGRESSION AND CORRELATION COEFFICIENTS FOR FACTORS RELATED TO ELIGIBILITY

Variable	Regression Coefficient	Standard Error	t	Partial Correlation Coefficient
X_1 (family income)	0.338523 E-06	0.000001	0.460	.006
X_2 (family debts)	-0.240477 E-04	0.000018	-1.320	-.018
X_3 (number of parents)	0.101652 E-00	0.044360	2.291	.031
X_4 (family size)	0.177122 E-03	0.003628	0.049	.001
X_5 (number in college)	0.613062 E-01	0.009416	6.511	.086
X_6 (father's occupation)	0.347705 E-01	0.009702	3,584	.048
X_7 (mother's occupation)	0.332241 E-01	0.015380	2.160	.029
X_8 (expected student occupation)	0.188261 E-00	0.009924	18.970	.245
X_9 (father's education)	0.222794 E-01	0.005316	4.191	.056
X_{10} (mother's education)	0.938237 E-02	0.006450	1.455	.019
X_{11} (sex)	-0.158364 E-00	0.012110	-13.077	-.172
X_{12} (race)	0.418831 E-01	0.017138	2.444	.033

Constant Term of Regression = - .311295
Coefficient of Determination = .150
F-Ratio = 82.542
N = 5,647

II. Choice of Enrollment at Four-Year, as Opposed to Two-Year Institutions

This analysis includes 1,821 or 62 percent of the 2,920 individuals in the survey who were eligible to attend either the University or State Colleges or both (and, of course, the Junior Colleges) and who indicated they planned to attend one institution or the other (i.e., there are no "non-attenders" in this sample). This sub-group (1,821) is slightly more Caucasian and more often male than the set of 2,920 cases. The father is less often in a professional occupation but at the same time the average family income is reported to be higher in the sub-group used for this regression analysis than in the total "four-year eligible" (FYE) group.

The specific question or dependent variable in this case (Y_2) specifies the choice of attendance at a four-year institution as opposed to attendance at a two-year institution by the individual who is eligible to attend either type of institution. The overall degree of "explanation" of variation in this decision is significant ($R^2 = .387$ and F ratio = 59.76, see Table G-2).

Significant independent variables, in the order of their appearance in the stepwise multiple regression are

1. Intended residence
2. Expected student occupation
3. Parent and family contribution
4. Level of father's education
5. Use of grants and scholarships
6. Use of loans

Notably, family income is not a significant factor in this choice, though it is negatively related to the two-year choice and the expected parent and family contribution to the costs of education is significant for the student enrolling directly into the four-year institution. While family size is not significant it is negatively correlated with the dependent variable. This taken together with the high positive coefficients for intended residence and expected family contribution seems to imply some regard for financial capability. In the case of the residence intention, however, the direction of causation is in question since a choice of two-year college, for whatever reason, normally results in the individual living at home. The regression results, of course, do not reveal the relative extent of this effect as compared to the student who does desire to remain at home for at least the first two years of college education and bases his enrollment choice primarily upon this consideration.

Expected student occupation is highly positively correlated on the dependent variable as it is in the case of the other analyses. In addition, the level of father's education is also significant and positive. Thus, the intention to attend a four-year institution is greater when the student's expected occupation is more professionally oriented and the father's education is more extensive. And, of course, the converse is true with respect to the intention to attend a two-year college.

The relative use of income sources describing parent contribution, use of scholarships, and use of loans all relate directly and significantly to the dependent variable. Notably, the only income form which carries a negative coefficient is that of the student earnings contribution. And while this coefficient is not significant, it does suggest a situation found elsewhere in this analysis, i.e., the tendency on the part of Junior College-bound individuals to work more often and rely less often upon family contributions than those individuals attending a four-year institution.

Consistent with the analysis of the enrollment decision by the JCE, the father's occupation is not significant nor is the number of parents, mother's occupation, or number to be supported in college. In contrast, all of these variables are found to be significantly related either to high school performance or the degree of work to be undertaken during attendance.

While family income was not found to be statistically significant in the "four-year vs. two-year choice," finances were the reason cited most frequently by the individual who desired to enroll at a four-year institution to explain why he probably would not be able to do so. Approximately 60% of those individuals in the survey who indicated they would not attend a four-year institution (even though eligible and desirous of doing so) and planned to enroll at a Junior College instead, cited the financial factor as being predominant. The next most frequently cited reasons for the inability to attend the preferred four-year institution, were that the individual either took the wrong courses in high school or did not receive sufficiently satisfactory grades.

Table G-2

REGRESSION AND CORRELATION COEFFICIENTS FOR FACTORS RELATED TO FOUR-YEAR VS. TWO-YEAR ENROLLMENT DECISION

Variable	Regression Coefficient	Standard Error	t	Partial Correlation Coefficient
X_1 (family income)	0.100724 E-05	0.000001	0.897	.021
X_2 (family debts)	0.688119 E-05	0.000028	0.248	.006
X_3 (number of parents)	-0.959902 E-01	0.088274	-1.087	-.026
X_4 (family size)	-0.487640 E-02	0.006214	-0.785	-.019
X_5 (number in college)	0.348051 E-02	0.015738	0.221	.005
X_6 (father's occupation)	-0.898784 E-04	0.015814	-0.006	-.000
X_7 (mother's occupation)	-0.318969 E-01	0.024065	-1.325	-.031
X_8 (expected student occupation)	0.201802 E-00	0.020399	9.893	.227
X_9 (father's education)	0.196404 E-01	0.008181	2.401	.057
X_{10} (mother's education)	0.993127 E-02	0.010425	0.953	.022
X_{11} (sex)	0.424465 E-02	0.019540	0.217	.005
X_{12} (race)	-0.915471 E-02	0.030562	-0.300	-.007
X_{13} (school residential status)	0.424718 E-00	0.023494	18.078	.392
X_{16} (willingness to borrow)	0.414588 E-01	0.025971	1.596	.038
SOURCES OF COLLEGE SUPPORT:				
X_{17} (parent and family contribution)	0.592383 E-04	0.000013	4.464	.105
X_{18} (work)	-0.311124 E-04	0.000034	-0.903	-.021
X_{19} (personal savings)	0.628690 E-04	0.000040	1.584	.037
X_{20} (scholarships and grants)	0.108255 E-03	0.000030	3.631	.085
X_{21} (loans)	0.732435 E-04	0.000029	2.533	.060

Constant Term of Regression = 0.000192
Coefficient of Determination = .387
F Ratio = 59.77
N = 1,821

III. Enrollment Decision by the "Junior College Eligible"

This analysis includes 3,429 of the 5,222 individuals in the survey who were not eligible to attend a four-year public institution (JCE). The dependent variables (Y_3) specifies the continuation of education beyond high school as opposed to the expressed intention not to attend any institution beyond high school. Independent variables describe general socio-economic characteristics of the individuals and families concerned.

The sub-sample of 3,429 cases examined in this regression analysis exhibit a higher average family income, contain fewer minority students (20% as compared to 24% in the total JCE group), and contain more individuals planning to attend (72%), than did the total JCE group (58%). Such differences are due to the fact that individuals planning not to attend were less apt to answer all of the survey questions analyzed and thus could not be included. It is not possible to estimate with precision the possible impact of including the remaining 1,793 cases in the analysis. However, the characteristics of those excluded would appear to reinforce the conclusions below relative to family financial capability.

As noted in Table G-3, the following four variables are statistically significant with respect to the college-going choice by JCE:

1. Total number of students from family to be supported in college
2. Student's occupational expectations
3. Total number of family dependents
4. Race

In addition, the educational levels of both father and mother are close to being statistically significant. The overall regression demonstrates a coefficient of determination ($R^2 = .335$) and F ratio (143.599) that are both significant.

The variable specifying "total number to be supported in college" is of questionable significance. The direction of causation is uncertain in that one may well decide to enroll for other reasons and thus determine the total number which the family will subsequently support in college. That causation may occur from dependent to this independent variable, rather than the reverse, is supported by the fact that the average number to be attending college from each family unit in this analysis is less than one (.93).

The student occupational expectation is highly significant in a positive fashion. Thus, the individual in this group who anticipates a professional career is more apt to attend college than that individual who anticipates a semi-professional or unskilled occupation. Fewer of the JCE expressed "professional" aspirations than was the case among the FYE group.

Total family size relates significantly and negatively to the dependent variable. Thus, other things being equal, individuals from larger families less often intend to attend the two-year college than individuals from smaller families. This finding would seem to have rather important implications for student financial aid programs. The College Scholarship Service formula for financial aid specifies that potential parent and family contributions to the cost of education are directly related to adjusted family income and inversely related to family size or, stated differently, the expected parent contribution is a function of the per-head financial capability exhibited by the family unit.[1] And, while income alone is not significantly related to the "two-year college-going choice," it seems that the latter choice is significantly and negatively related to the level of income per family dependent (i.e., $Y_3 = f\left(\frac{X_1}{X_4}\right)$ and $f < 0$). Thus, the financial capability of the family unit is significant and the possible loss in financial contribution by the family member who would attend college would appear to be important in the enrollment decision. This loss in family income contribution results both from the added expense of the individual attending college as well as the earnings foregone by not working or working only part time. Note also the significant relationship between family size and the extent of work planned by those individuals who are going to college (analysis of dependent variable, Y_4, below). The college attendance decision and choice of work (if attending college) are both related in large part to obligations on the part of the potential student for the support of family needs which in turn may be largely noneducational.

The regression coefficient for race is negative, i.e., with other factors held constant, there was a relative greater intent to attend Junior College among individuals of minority background than among individuals of Caucasian background. This would not appear to be consistent with the average "college-going" rate expressed by minority students in the JCE group (54%) as compared to that calculated for Caucasian students (60% indicated attendance plans). Therefore, had the individuals excluded from this "regression" sample been included, it is possible that the regression coefficient for race may have been positive and/or not statistically significant. The ACE data indicate that minority students constituted a greater proportion (23%) of the freshman enrollment in California Junior Colleges (in fall 1967) than they (minority students) constituted of the California high school senior class of 1967 (19%). In contrast, the Bureau of Intergroup Relations (California State Department of Education) has estimated that minority students made up about 18 percent of total Junior College enrollment during 1967-68. In short, the evidence is not entirely clear.

In summary, among individuals who are not eligible to attend a four-year institution, the decision to enroll at the Junior College is found to be related primarily to the student's occupational expectation, family financial capability and racial background.

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[1] See College Scholarship Service, Financial Aid Manual.

A similar analysis of the enrollment decision by the FYE (not described here) resulted in the "number in college" and "expected student occupation" being significantly related to enrollment choice. In contrast to the result for Junior College eligibles, however, family size was not significant in the enrollment choice by the FYE. The average family income for the latter group was $12,740 or more than $2,000 greater than that income reported for the family of the JCE individual ($10,725). The average family size was similar (number dependent upon the family income) for both eligible groups 4.3. Thus, for the group with the significantly higher average family income, the ratio (X_1/X_4) did not assume nearly the significance in relation to the college-going decision as it (the ratio) did among the less wealthy families of similar size. These results further support the above conclusions with respect to the importance of foregone earnings in the decision regarding college enrollment by the JCE.

Table G-3

REGRESSION AND CORRELATION COEFFICIENTS FOR FACTORS RELATED TO THE ENROLLMENT DECISION BY THE "JUNIOR COLLEGE ELIGIBLE"

Variable	Regression Coefficient	Standard Error	t	Partial Correlation Coefficient
X_1 (family income)	-0.120292 E-05	0.000001	-1.445	-.025
X_2 (family debts)	-0.811008 E-05	0.000019	-0.432	-.007
X_3 (number of parents)	0.182274 E-01	0.040195	0.453	.008
X_4 (family size)	-0.198027 E-01	0.003637	-5.444	-.093
X_5 (number in college)	0.333643 E-00	0.009736	34.268	.506
X_6 (father's occupation)	0.977238 E-02	0.009944	0.983	.017
X_7 (mother's occupation)	-0.655593 E-04	0.015990	-0.004	-.001
X_8 (expected student occupation)	0.950612 E-01	0.009787	9.713	.164
X_9 (father's education)	0.103741 E-01	0.005589	1.856	.032
X_{10} (mother's education)	0.118046 E-01	0.006591	1.791	.031
X_{11} (sex)	-0.115704 E-01	0.012696	-0.911	-.016
X_{12} (race)	-0.482645 E-01	0.016939	-2.849	-.049

Constant Term of Regression = 0.300808
Coefficient of Determination = .335
F Ratio = 143.59
N = 3,429

IV. Plans for Work While in Attendance

This analysis includes 4,354 (80%) of the 5,454 high school seniors in the survey who indicated they intended to enroll in an institution of higher education during the fall following the spring of 1967 (i.e., excludes "non-attenders"). For the group of 4,354 cases, the average family income was some $2,000 higher than that recorded for the entire sample of 5,454 individuals. In addition, .74 of the sample indicated they planned to reside at home during their school attendance. This compares with the .89 of JCE who indicated they plan to live at home and the .59 of the FYE similarly inclined. The group is comprised of approximately equal numbers of four-year and two-year eligibles.

The dependent variables (Y_4) analyzed in this case specifies the indication of the potential student as to whether he plans to work full-time, part-time, or not work at all during the time he is enrolled. Assigned values are: full-time work, 2.0; part-time work, 1.0; and no work, 0.0. The mean value for Y_4 of 0.73 suggests the average individual was tending toward part-time work while enrolled. As noted in Table E-4, twelve of the nineteen independent variables examined are significantly related to variation in the extent to which an individual plans term-time work. The overall level of explanation ($R^2 = .210$, F Ratio = 60.52) is not as high as in the other questions examined, but it is statistically significant nonetheless.

As one might have expected, the variable describing the "contribution to cost to be derived from student work" is the most significant independent variable. However, there is the question of direction of causation, since the student may decide for other reasons that he must work and thus define the cost contribution from student work to be relatively high. Notably, all other sources of college support are negatively related to the working decision. Of these other sources, the use of scholarships and grants and the parent contribution are statistically significant. Also significant and negatively related is the indicated willingness to borrow on the part of the student. Those planning work are normally less willing to borrow. The planned use of loans as an income source is also negatively related to the extent of work planned.

The indicated residential status is related in a negative and highly significant way to the dependent variable. Those planning to live at home are more often planning to work part or full-time than are those who will reside on campus, or at least away from home. One may infer from this that the individual planning to attend a Junior College (and more frequently indicating home residence during the school term) plans more often to work than does the student who intends to enroll at a four-year institution. This conclusion is consistent with results of the ACE survey.

The results also indicate that males are planning to work more often than females during the school year. In addition, the results suggest an inverse relationship between the degree of work planned and the mother's level of education but a positive or direct relationship with mother's occupation. In contrast, the degree of work planned is negatively related to the level of father's occupation.

The expected career occupation of the student is negatively related to the degree of work he plans to undertake while in attendance. Notably, family size is significantly related in a positive way while the coefficient for family income is significant and negative. These results taken together are consistent with similar findings encountered in the analysis of enrollment decision by the JCE. Increases in planned work are extremely sensitive to decreases in the level of income per family dependent ($Y_4 = f(\frac{X_1}{X_4}), f < 0$).

These findings suggest that greater term-work undertaking on the part of the JCE is due not to greater educational cost (the direct cost of attending a Junior College is nominal), but rather to the need for support of total family expenditures.

Table G-4

REGRESSION AND CORRELATION COEFFICIENTS FOR VARIABLES RELATED TO WORK PLANS WHILE IN ATTENDANCE

Variable	Regression Coefficient	Standard Error	t	Partial Correlation Coefficient
X_1 (family income)	-0.201735 E-05	0.000001	-2.135	-.032
X_2 (family debts)	0.337983 E-04	0.000022	1.522	.023
X_3 (number of parents)	0.574044 E-01	0.057971	0.990	.015
X_4 (family size)	0.183261 E-01	0.004696	3.902	.059
X_5 (number in college)	-0.123812 E-01	0.013146	-0.942	-.014
X_6 (father's occupation)	-0.264388 E-01	0.012047	-2.195	-.033
X_7 (mother's occupation)	0.485236 E-01	0.019226	2.524	.038
X_8 (expected student occupation)	-0.356699 E-01	0.012944	-2.756	-.042
X_9 (father's education)	-0.106221 E-01	0.006560	-1.619	-.025
X_{10} (mother's education)	-0.317942 E-01	0.008110	-3.920	-.059
X_{11} (sex)	0.899687 E-01	0.015287	5.885	.089
X_{12} (race)	0.337330 E-01	0.021492	1.570	.024
X_{13} (school residential status)	-0.264697 E-00	0.020553	-12.879	-.192
X_{16} (willingngess to borrow)	-0.448527 E-01	0.018011	-2.490	-.038
SOURCES OF COLLEGE SUPPORT:				
X_{17} (parent and family contribution)	-0.987619 E-04	0.000011	-9.221	-.139
X_{18} (work)	0.297153 E-03	0.000022	13.373	.199
X_{19} (personal savings)	-0.814095 E-05	0.000034	-0.238	-.004
X_{20} (scholarships and grants)	-0.903358 E-04	0.000030	-2.983	-.045
X_{21} (loans)	-0.171601 E-04	0.000029	-0.599	-.009

Constant Term of Regression = 0.874143
Coefficient of Determination = .210
F Ratio = 60.52
N = 4,354

V. Multiple Regression Specifications

Regression Equations: (variables listed below)

$Y_1 = X_1$ 2 3 4 5 6 7 8 9 10 11 12

$Y_2 = X_1$ 2 3 4 5 6 7 8 9 10 11 12 13 16 17 18 19 20 21

$Y_3 = X_1$ 2 3 4 5 6 7 8 9 10 11 12

$Y_4 = X_1$ 2 3 4 5 6 7 8 9 10 11 12 13 16 17 18 19 20 21

Dependent Variables:

	Group	Question	Value
Y_1	Total sample	4-year eligible	1.0
		not 4-year eligible	0.0
Y_2	4-year eligible, planning to attend any institution	attend 4-year institution	1.0
		attend 2-year institution	0.0
Y_3	2-year eligible	to attend any	1.0
		not to attend	0.0
Y_4	Plan to attend	work full-time	2.0
		work part-time	1.0
		not work	0.0

Independent Variables:

	Group		Value
X_1	Total family income		dollars
X_2	Total family debts and obligations		dollars
X_3	Number of parents		number
X_4	Family size		number
X_5	Number supported in college		number
X_6	Father's occupation	professional Farm owner or Manager Business owner Artist, Entertainer Public Official Manager or Executive Other Professions: doctor, lawyer, teacher, etc.	2.0

	Group		Value
X_6	(Continued)	semi-professional	1.0
		Skilled craftsman Salesman Office worker Technician	
		semi-unskilled	0.0
		Workman Service worker Machine operator	
X_7	Mother's occupation	professional	2.0
		(same scale as X_6)	
		semi-professional	1.0
		(same scale as X_6)	
		semi-unskilled	0.0
		(same scale as X_6)	
X_8	Expected student occupation	professional	2.0
		(same scale as X_6 and X_7)	
		semi-professional	1.0
		(same scale as X_6 and X_7)	
		semi-unskilled	0.0
		(same scale as X_6 and X_7)	
X_9	Level of father's education: 1, 2, ...		8
		Received doctor's degree (Ph.D., MD, etc.)	8
		Received master's degree (MA, MS, etc.)	7
		Graduated from college	6
		Some college or technical training after high school	5
		Graduated from high school	4
		Some high school	3
		Finished grade school	2
		Some grade school or no school	1
X_{10}	Level of mother's education: 1, 2, ...		8
		(same scale as X_9)	
X_{11}	Sex:	male	1.0
		female	0.0
X_{12}	Race:	Caucasian	1.0
		Minority	0.0

	Group		Value
X_{13}	School residential status:	Live at school	1.0
		Live at home	0.0
X_{16}	Student willingness to borrow:	Yes	1.0
		No	0.0
X_{17}	Parent and family contribution:		dollars
X_{18}	Student's work:		dollars
X_{19}	Student personal savings:		dollars
X_{20}	Use of scholarships and grants:		dollars
X_{21}	Use of loans:		dollars

VI. Sample Method of Coordinating Council for Higher Education Survey

The sample upon which the preceding analyses are based was taken from the 1967 high school senior class in California. Originally, both public and private high schools were to be sampled; however, due to procedural difficulties, no private high school seniors were represented. The survey is representative of the 235,000 1967 public high school seniors. The sampling method was developed by the University of California staff. The sample was collected by Coordinating Council staff in cooperation with University and State College staffs. The analytical treatment contained within this report, of course, is the sole responsibility of the Coordinating Council staff.

Method

The subjects were derived from a two-stage stratified sample: In the first stage, specific high school senior classes were identified, and in the second stage, students within those classes were selected. For analytical purposes, an effective sample size was deemed to be approximately 16,000 students.

Initially, high schools were stratified into six main geographic groups: (1) San Francisco metropolitan, (2) Sacramento-Stockton, (3) other northern, (4) Los Angeles metropolitan, (5) San Diego, and (6) other southern.

For each of the strata, substrata were developed to include high schools of approximately equal size, each such substrata having an equivalent total of seniors. In all, there were 39 total substrata, each with approximately 6,000 high school seniors. Therefore, since approximately 16,000 were to be sampled, each substrata provided about 400 students.

High schools were selected from within substrata so that each had a probability of selection proportional to the size of its senior class. The result was a selection of 265 from approximately 677 public high schools in the state.

A systematic random sample of students was then selected from each high school class so that every student had an equal change of being selected. Thus, by these methods each student in the 1967 senior class in California had a probability of selection equal to every other student in the class, this probability always being equal to 1/15th.

Characteristics of the Return

In total, some 8,162 usable responses were derived from the sample, representing a return of over 52%. To examine characteristics of the group responding, it is possible to compare certain of the survey questions with questions of similar wording contained in the SCOPE (School of College Opportunities for Post-secondary Education) examination in California twelfth graders in 1966[1]. The SCOPE investigation involved 7,567 high school seniors from 32 public and 12 non-public high schools in California. While the analytical objectives of the two projects are somewhat different, both samples are drawn from high school senior classes and intended to be representative of the total high school population in California for the respective years. Thus, comparisons of similar questions are relevant in determining the credibility of the 1967 response.

In general, the Coordinating Council survey resulted in a greater degree of public school representation as well as a larger proportion of females. With regard to the latter consideration, the CCHE subjects covered were 48.1% male as opposed to 51.9% female. By comparison, the SCOPE survey contained 50.4% male and 49.6% female.

Participants in the two surveys were nearly identical in their description by: father's employment status, employer type, and occupation; mother's employment type and occupation; and student's occupational choice. The educational level of fathers and mothers in the CCHE survey was slightly lower than that in the SCOPE survey. The relative distributions of family income in the two samples were quite similar (see Table G-5). On the average, family income was reported to be slightly higher in the CCHE survey as would be expected in view of the one-year time gap.

Table G-5

ESTIMATED TOTAL FAMILY INCOME

	Percent of Distribution	
	CCHE	SCOPE
Less than $2,000 per year	2.0%	2.2%
$2,000 to $3,499	2.7	4.1
$3,500 to $4,999	4.7	7.0
$5,000 to $7,499	14.8	18.7
$7,500 to $9,999	17.8	20.0
$10,000 to $14,999	34.3	29.2
$15,000 to $19,999	13.8	9.7
$20,000 and over	9.8	9.0

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[1] This project is jointly sponsored by the Center for Research and Development in Higher Education, University of California at Berkeley, and the College Entrance Examination Board.

With respect to the racial categories comprising the CCHE sample, it is possible to make an approximate comparison with the actual distribution of the Fall 1967 high school senior enrollment as reported by the California State Department of Education. (See Table G-6.)

Table G-6

RACIAL DISTRIBUTION OF HIGH SCHOOL SENIORS

	Percent of Distribution	
	CCHE	SDE
Mexican/Spanish-American	8.7%	9.9%
Caucasian	80.4	80.6
Negro	3.6	6.3
Chinese, Japanese, Other Asian	3.9	2.4
American Indian	3.5	.2
Other Non-White	-	.6

Representation of Mexican/Spanish-American and Caucasian backgrounds is similar for both distributions. The CCHE survey, however, displays an underrepresentation of the Negro community along with an oversampling of Oriental and American Indian groups.

The CCHE survey subjects may display a slight rural bias in that the response rates were lowest in the Los Angeles and San Francisco metropolitan areas while response rates were highest in the Sacramento-Stockton and nonmetropolitan southern strata. The extent to which this factor may tend to skew the distribution of characteristics (both economic and sociologic) is unknown at this time.

There does appear to be a bias among California State College "eligibles" toward an over-representation of females. This seems to have resulted because of the criteria used to determine eligibility for this study. Due to the extreme limitation of time and sheer mechanics of handling the number of subjects involved in the survey, an evaluation of subjects to determine State Colleges eligibles could only be based upon consideration of grade point average (as contrasted to the actual method of determining eligibility which combines grade point average and test score). This approach resulted in an eligible group of 40% male and 60% female. It is known that a test-only criterion would result in an approximate split of 50/50. The male/female distribution in the CCHE survey is, therefore, what one would expect upon examining the composition of the freshman class during the Fall 1966 in the State Colleges: 45% male and 55% female. The implications of this bias in calculating financial need were discussed earlier.

An apparent over-representation of "University eligibles" (19% of total sample) includes a number of students who are marginally eligible. Evaluation of transcripts indicated a "near certain" eligibility for 1,197 subjects (14.7% of the total survey) while an additional 352 (4.3%) were considered to be marginally eligible. The set of individuals eligible to attend the State Colleges (36%) is quite close to the Master Plan recommendation of 33%.

VII. Profile of Sample of Fall 1967 Freshmen in California Institutions

The following items were developed for the Council by the Office of Research of the American Council on Education from its survey of entering freshmen.

	UNIVERSITY	STATE COLLEGES	JUNIOR COLLEGES	PRIVATE COLLEGES
n (Total Responses)	*9,672*	*1,633*	*8,423*	*3,155*
ITEM DESCRIPTION:				
1. Probable career occupation				
n (responses to item)	*9,400*	*1,597*	*7,903*	*3,055*
Artist (incl. performer)	6.3%	7.2%	6.7%	8.7%
Businessman	3.2	7.6	10.5	7.8
Clergyman	0.3	0.1	0.4	2.5
College teacher	2.0	1.5	0.7	2.6
Doctor (MD or DDS)	9.6	6.1	2.9	6.6
Educator (secondary)	11.1	17.1	8.0	11.9
Elementary teacher	5.5	12.3	5.2	5.1
Engineer	7.0	6.8	7.3	4.0
Farmer or Forestor	0.2	1.2	1.5	0.5
Health professional (non-MD)	3.5	4.4	3.8	2.3
Lawyer	6.2	3.5	2.0	7.7
Nurse	1.1	1.8	3.5	0.3
Research Scientist	8.5	4.2	1.4	5.5
Other choice	18.2	15.4	36.1	20.1
Undecided	17.1	10.8	9.9	14.2
2. Major influences in deciding to attend this college				
n (responses to item)	*9,672*	*1,633*	*8,423*	*3,155*
Parent or other relative	40.3%	48.1%	43.7%	42.5%
High school teacher or Counselor	15.2	20.5	16.8	26.8
Friends attending this college	12.5	13.9	15.0	13.2
Grad or other college representative	6.7	7.5	7.1	19.8
Counseling or Placement service	1.6	3.0	5.2	3.3
Athletic program of college	3.7	2.5	5.0	5.0
Other extracurricular activities	7.3	2.4	3.7	8.1
Social life of college	9.9	3.1	6.0	8.1
Chance to live away from home	26.8	8.2	2.2	27.2
Low cost	21.7	33.4	35.7	3.0
Academic reputation of the college	68.2	42.1	19.1	67.4
Most students are like me	5.8	4.8	6.6	9.3
Religious affiliation	1.1	0.5	1.4	12.4

	UNIVERSITY	STATE COLLEGES	JUNIOR COLLEGES	PRIVATE COLLEGES
3. Father's education				
n (responses to item)	*9,585*	*1,623*	*8,247*	*3,127*
Grammar school or less	3.4 %	6.6 %	12.1%	4.2%
Some high school	6.2	11.5	20.3	6.7
High school graduate	17.8	29.1	29.3	16.9
Some college	22.2	25.1	21.0	20.4
College degree	28.2	18.7	12.5	27.3
Postgraduate degree	22.2	9.0	4.8	24.5
4. Mother's education				
n (responses to item)	*9,588*	*1,623*	*8,280*	*3,131*
Grammar school or less	2.7%	3.6%	9.5 %	2.6%
Some high school	6.1	10.4	18.4	5.5
High school graduate	30.2	41.9	40.8	27.6
Some college	30.3	27.7	20.1	27.2
College degree	24.7	13.3	9.4	29.6
Postgraduate degree	6.1	3.1	1.7	7.5
5. Racial background				
n (responses to item)	*9,604*	*1,627*	*8,327*	*3,140*
Caucasian	90.6%	94.4%	77.2%	90.6%
Negro	1.6	0.6	8.6	3.1
American Indian	0.1	0.3	1.3	0.3
Oriental	6.7	3.6	7.2	4.1
Other	1.0	1.2	5.7	1.9
6. Father's occupation				
n (responses to item)	*9,433*	*1,591*	*7,965*	*3,075*
Artist (incl. performer)	1.6%	1.0%	0.9%	1.2%
Businessman	35.0	34.4	26.3	38.4
Clergyman	0.4	0.5	0.5	1.7
College teacher	2.0	1.1	0.3	1.8
Doctor (MD or DDS)	5.1	1.0	0.8	6.3
Educator (secondary)	3.0	3.4	1.3	3.0
Elementary teacher	0.4	1.0	0.3	0.5
Engineer	13.4	9.9	8.1	9.4
Farmer or Forestor	1.5	7.4	1.4	3.1
Health Professional (non-MD)	1.5	1.4	0.9	0.9
Lawyer	2.6	0.5	0.3	3.4
Military career	3.9	2.1	2.4	2.4
Research scientist	2.4	0.9	0.3	1.1
Skilled worker	7.4	13.0	15.8	6.7
Semi-skilled worker	2.9	4.3	8.1	2.9
Unskilled worker	0.9	0.9	3.7	1.6
Unemployed	0.8	0.8	1.5	0.9
Other	15.1	16.4	27.2	14.8

	UNIVERSITY	STATE COLLEGES	JUNIOR COLLEGES	PRIVATE COLLEGES
7. Estimated Parental Income				
n (responses to item)	*9,387*	*1,598*	*8,193*	*3,069*
Less than $4,000	2.6%	2.9%	5.4%	2.9%
$4,000 - $5,999	4.4	5.8	8.7	4.2
$6,000 - $7,999	7.2	10.4	11.6	7.4
$8,000 - $9,999	9.7	12.9	12.6	9.3
$10,000 - $14,999	26.8	30.8	22.4	23.1
$15,000 - $19,999	14.9	11.7	8.2	11.5
$20,000 - $24,999	9.0	3.9	3.2	7.6
$25,000 - $29,999	3.8	2.3	1.3	4.6
$30,000 - or more	7.7	2.8	2.3	11.7
Have no idea	14.0	16.6	24.3	17.6
8. Major Sources of Financial Support During Freshman Year				
n (responses to item)	*9,672*	*1,633*	*8,423*	*3,153*
Personal savings and employment	16.9%	33.8%	46.6%	11.6%
Parental or Family aid	74.4	58.2	43.7	67.9
Repayable loan	6.8	5.1	1.4	14.2
Scholarship, Grant, or other gift	13.7	9.9	5.0	27.3
9. Concern about Financing Education				
n (responses to item)	*9,650*	*1,629*	*8,379*	*3,137*
None	38.3%	34.5%	37.9%	36.8%
Some concern	55.6	59.8	53.6	54.8
Major concern	6.1	5.7	8.5	8.4